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PHOTO - ERA

The American Journal of Photography

AN ILLUSTRATED MONTHLY

OF

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ON A SHEEP RANCH

WILLIAM S. RICE

PHOTO - ERA

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No. 1

The Gum Process and Its Proper Application

SIDNEY ALLAN

THE contention whether photography is an art or not, or what is legitimate or illegitimate in its technique, has been a pet theme for discussion for the past forty years. The difficulty of settling this problem lies largely in the peculiarities of the photographic process. Half mechanical, half a matter of good taste, without the addition of manual dexterity, it is so vastly different from anything else we call art that it is well-nigh impossible to classify it. It is futile to compare it with painting; and as far as the graphic arts are concerned, well, there is first the same differentiation we have just pointed out, and secondly, that the texture of the photographic print is devoid of granulations. In the graphic arts there is no method which makes use of granulation so minute as to be indistinguishable, as is the case with photographs which, like printed matter, represent a uniformly smooth surface. Multitudes of particles and granules, as, for instance, in wood-engraving or lithography (not to speak of lines that stand in relief as in engraving and etching), have a greater charm to the eye than a flat surface. at least in monochrome.

That photography is deficient in texture even its most enthusiastic exponents do not deny. It has been a great drawback of the straight photographer. He is hedged in by mechanical influences that sap enthusiasm and deaden the ambition; he is harassed till, like a fox chased by the hounds, he would feign give up the merit of his own production and escape to a burrow of peaceful oblivion. And this helplessness has been the reason that all sorts of manual manipulation were appealed to, in order to break the monotony. The result, although beautiful at times, was a hybrid pictorialism which is neither photography nor art. And, to tell the truth, paper with a rough surface has been more to the point than all manual embellishments.

Not until the gum process (discovered toward the middle of the last century, and soon after discarded as unpractical) was revived was there a real excuse for hand-manipulation. With its introduction the use of the brush became perfectly legitimate, as the brush is now a tool of the process. After a gum-print has been taken from the printing-frame — merely the outlines of the image being recorded — by the application of water with the help of a brush as much or little of the

layer of gum as may be desired can be washed off. This adds a certain resemblance of granular texture to the photographic print, approaching, in a way, the methods of the black-and-white arts. The gum process represents a mechanical process *plus* manual dexterity. The extreme pictorialists, overjoyed at finding such a loophole, played havoc with the process and lost themselves completely in wild imitations of painter-like effects. To them a gum-print is not successful unless it resembles the mangy fresco-surface of Leonardo da Vinci's "Last Supper," of which the pigment is steadily peeling off.

But there are other photographers who use the gum process more wisely, who look at it merely as a facility to augment photographic conditions. They are the real gum workers. In their opinion the gum process can be legitimately used only to gain more freedom and looseness of effect, without destroying the constructional qualities of the photographic image. The gum worker, so long as he claims to be a photographer, has no right to get out of touch with the facts of the negative. And this seems the chief shortcoming of the process. The process is so rapid that even the experienced worker with a thorough knowledge of forms is apt to lose sight of the realities of the ground-plan, and the result is invariably a falsification of values. At present it can be safely used only to sweep obtrusive details into broad masses, to produce a strong picture without harshness, to make the value-variations more subtle, and, above all, to add the gritty surface effect, peculiar to gum, to his prints. Moderation must be the first rule in its application. There is no reason why the photographic craftsman should think it advantageous to rival with the monotypist. The photographic texture must be preserved; only then will it become a valuable possession.



A Catechism on Focal Lengths

G. M. ALVES

Question.— If lens optics is an exact science, why is it that workers in photography usually know so little about the subject, and why is it that in print we so often see contradictions?

Answer.— Lens optics is an exact science, but is usually treated in a rigorous, mathematical way, which the general run of those who practise photography cannot understand; also, those who write about the subject frequently have really no scientific knowledge of it, and, hence, are apt to get into errors and contradictions along with their truths and half-truths.

Ques.— Can one acquainted with lens optics explain in simple language to one not skilled in mathematics the practical results of the science?

Ans.— Yes; all that he really needs to know.

Ques.— What effect has the focus of the lens upon the photograph?

Ans.— The focus of the lens has two effects: (1) it determines the size of

the objects in the photograph; (2) it determines the depth of focus in the photograph.

Ques.— In what way does the focal length of a lens determine the size of an object in the photograph?

Ans.— The matter may be simply explained as follows: if, at any distance from your eye, you hold a pane of clear glass between your eye and any scene, and if, upon the glass so held, you imagine the scene to be etched, then the scale or size of the objects of the etching will be that of a photograph taken with a lens of focal length equal to the distance from your eye to the pane of glass. If the glass was held eight inches from the eye, then the etching would give objects of the same size as would a photograph taken with an eight-inch lens. If the pane of glass was held at sixteen inches, then the etching would give the objects of the same size as would a photograph taken with a sixteen-inch lens. Now it is easy to see that the size of the objects on the etching is in exact proportion to the distance of the pane of glass from the eye; consequently, the sizes of the object in a photograph are in exact proportion to the focal length of the lens used: just twice as large with the sixteen-inch lens as with the eight-inch lens; and so for all lenses. To be more precise, we should say the conjugate focus instead of the focus, but in usual photographic work the conjugate focus will sufficiently agree with the focus for all practical purposes in the foregoing statements.

Ques.— We are sometimes told that a short-focus lens gives defective perspective and drawing. Is there anything in that?

Ans.— Nothing whatever. At the same distance, the perspective and drawing with a lens of any focus is precisely the same. If with a seven-inch lens we expose a 4 x 5 plate, and then with a fourteen-inch lens we expose an 8 x 10 plate, we will have negatives differing only in size. Make an enlargement from the smaller negative to double its size and the enlargement will register at all points with a print from the 8 x 10 negative, thus proving identical perspective and drawing.

Ques.— But as a matter of fact, we more often see defective perspective and bad drawing in photographs made with short-focus lenses than in those made with lenses of longer focus. How, then, is this fact to be accounted for?

Ans.— In this way: workers with short-focus lenses will often not content themselves with the small images given and, in order to get size, will push their cameras too near to the object or objects to be photographed, and thus get defective perspective and drawing; whereas workers with longer-focus lenses are more often able to get the size they require, at a proper distance for correct drawing and perspective. Obviously, the short-focus workers should keep back to the proper distance and be satisfied with small images; or if they needs must have larger, make enlargements from their small negatives.

Ques.— Why will any correctly-made lens produce defective perspective and drawing when placed near an object? Why will it do so, when the eye at the same distance will not?

Ans.—As a matter of scientific fact, the lens does not. The perspective and drawing of such a lens are precisely that of the mathematical requirements of linear perspective. Indeed, the perspective and drawing are the same as that refracted to the retina of the eye. But the mind, for reasons of its own, changes the perspective and drawing of actual near objects as seen by the eye. However, the mind refuses to change, or but feebly changes, the drawing and perspective when the eye gives it at second hand. The picture, whether photograph or hand-work, is not sufficiently realistic for the mind to fully change and assimilate it. Therefore, when we say the drawing or perspective of a photograph of a too near object is defective we are using the term relatively. It is not defective in truth, but in relation to the assimilation of the mind. Both the photographer and the artist in hand-drawing must keep sufficiently back so as not to offend the mind. The artist with his drawing can if he desires push further within the conventional “perspective distance,” and consciously or unconsciously change the real perspective to the requirements of the mind.

Ques.—Can the foregoing answer be made plain by examples, without going too much into mathematics?

Ans.—Yes. It is quite plain that the size of objects apparently varies as their distance. A man will appear twice the size at one hundred feet that he will at two hundred. Suppose, then, we are to photograph a human face. It is found by observation that if we place the lens — it matters not what is its focus — at less than about six feet, the likeness or drawing will not be satisfactory. The reason is, the nearer features will appear in the photograph proportionally larger than will the more distant features. Now this is really as it should be in the abstract, scientific fact; but the mind will not be satisfied with the drawing of the print — it will demand the features to be in nearer scale or proportion. Yet the mind will be satisfied with the drawing if the eye receives the direct image at considerably less than the six feet. The drawing on the retina will be assimilated by the mind.

So, too, if we photograph a horse quite near-by, and standing quarteringly towards us, in the print the head and shoulders will appear much too large for the receding hind parts; i.e., the drawing will appear bad. At the same position, as seen by the eye, the horse will appear all right; also, a photograph taken in the forest will give the too near tree-trunks a seemingly proportionately greater size than those in the distance, but this will not appear to the eye as it looks at the trees at first hand.

Ques.—Now for practical results of the foregoing. In the various problems of picture-taking, how may one know how far to set the camera back in order to get perspective and drawing which will satisfy the mind?

Ans.—This is not a question of mathematics, but one of artistic judgment. Note carefully the image on the ground-glass. This image is not like looking on the scene with the eyes, but is essentially a picture, with all that a picture implies. In perspective and drawing it will be just like the photographic print. If, when carefully observed, the image on the ground-glass satisfies in perspec-



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CHARLES TRACY

THE COAL-GATHERERS

tive and drawing, then you may be sure that the print will satisfy in such respects. In taking the portrait mentioned above, you will carefully observe whether the drawing of the image is good — whether it is a good likeness. If you are critical, you will see that you cannot get what you want at less than six feet and you may prefer seven feet. In taking the horse standing obliquely, you will be sure to keep far enough back so that the drawing of all of its parts will be natural and in proportion. If you have not a lens of sufficient focus to yield the size you want, you will then resort to an enlargement for the size. If in the forest, you will be careful to avoid very near trees; or if your picture is to be with the near-by trees, then, by using the largest aperture or stop, cut off the distant objects by throwing them out of focus.

(To be continued)



GUST HORLIN

SWEDISH LANDSCAPE

E. S. Curtis and His Work

A. F. MUHR

FOR obvious reasons it is almost impossible for one situated as I am, intimate though the relation may be, to write connectedly of Mr. Curtis and his achievements. He would never tolerate a "Bozzy," but if one were connected with him, he would be so overwhelmed with work in a short time, driven from early till late, that poor Boswell would find time for little else — except to embrace the short respite for much-needed sleep.

Curtis himself is the most tireless worker that I have ever known, and his example is so contagious that every one connected with him seems fired by the same enthusiasm and imbued with the same energy and ambition to do things and accomplish the work laid out for him.

We have seen very little of Mr. Curtis at the Seattle Studio, especially in the last two years, his time being taken up almost entirely by his work in the field, where he is busy with camera and note-book, gathering material. The short intervals at home are devoted to writing up the field-notes and the preparation of the MSS. for the forthcoming publication, "The Indians of North America." This publication will be as elaborate and important an undertaking as any ever

attempted, and will, for boldness, be a close rival to that of Audubon, nearly a century ago.

While here, besides giving some time to portraiture, Mr. Curtis sees that lantern-slides are made for his illustrated lectures, toned slides being used almost exclusively. Enlargements and other work connected with the Indian business must receive attention. Hasty consultations are held in reference to methods and ways and means to improve the work and further the business interests.

Although Mr. Curtis is one of the most genial and pleasant of men, he is extremely modest and reticent in regard to his personal experiences; he shuns notoriety. It is only when some requisition necessitates an explanation that we get any information of the numerous accidents and mishaps which are the outcome of the strenuous life which he leads in the field. If, on his return, some one expresses surprise at the particularly disreputable appearance of his outfit or the dilapidated condition of some necessary piece of apparatus, Mr. Curtis may be induced to explain to us how it happened. And it is from bits and scraps of information of this sort that I have arrived at the conclusion that nothing short of complete destruction of his camp equipment would cause him to abandon a projected trip. On one occasion his reflex camera was brought back held together by a rope tied in a diamond cinch about it, and when this was untied the camera fell apart. In spite of this, the season's work showed very few traces of the difficulty under which it had been done.

It is in things of this kind that Mr. Curtis shows his resourcefulness and demonstrates that he is naturally equipped to grapple with a subject that would tax another's patience to the utmost or compel the entire abandonment of the project. Sitting up at night to repair an outfit, by candle-light, that might seem worse than useless is evidence of the sincerity of purpose and absolute determination to carry on the work in spite of all obstacles. Every hindrance and interference is met patiently, but with the perseverance and persistence which lead to success.

On one trip he was confronted by a roaring torrent where a dry arroya was expected. He hastily converted the canvas wagon-covers into bateaux and floated the outfit across. On another occasion he risked his life to recover his outfit, that was spilled from the wagon in fording a stream.

One night they made a camp, and just as they were cooking the evening meal a cloudburst made them work in water to the waist before they could stow the outfit in the wagons, so sudden was the downpour. The rest of the night was spent on the alert, not knowing whether the waters would subside or another downpour would carry them away in the darkness. In the hottest spot in the United States he encountered death in the most horrible form. Putrefaction set in immediately, and so great was the heat that the buzzards and vultures had to be beaten off, while a rude coffin was constructed, a shallow grave dug and the remains laid away. As an offset to this he was caught in an unexpected mountain blizzard and snowbound, and held by the torrents which poured down the mountainside by the rapid melting of the snow under the torrid rays of a



E. S. CURTIS
AN INDIAN MAIDEN



tropical sun. As soon as they were able to resume the journey, a burro lost his footing and fell over a precipice, carrying his pack, containing cameras, with him. The scattered fragments were collected on the mountainside, and again assembled into a serviceable camera so the work could be carried on. These are some of many mishaps, and perhaps enough of the mechanical and physical difficulties and inconveniences to be encountered and overcome.

These, Mr. Curtis considers lightly, and nothing compared to the daily difficulty he meets in his dealings with that unknown quantity — the Indian. The qualities so necessary to success in dealing with him, Mr. Curtis possesses to a remarkable degree: tact, diplomacy and courage, which, combined with a good stock of patience and perseverance, have made it possible to succeed where others have failed. The Indian, quite naturally, is suspicious and distrustful of advances made by his white brother in overcoming the prejudices and allaying the fears, engendering a feeling of respect and mutual confidence, to make him his friend and command his good will. In this lies the secret to be able to establish that footing of absolute confidence which enables Mr. Curtis to get them to abandon themselves to the old life and forget the present and their environment. This enables him to not only get the pictures, but even the older and more conservative old fellows throw off the restraint and, breaking through the reserve, will tell things which it is so hard to learn, and so interesting to know. The most sacred rites — ceremonies which have been performed in secret and kept from the prying eyes of the inquisitive scientist — have been not only witnessed, but submitted to the camera.

There have been times when he seemed an unwelcome spectator and marked hostility was manifested; when diplomacy was of no avail, and only by an exhibition of that unflinching courage, not yielding the least ground, he not only conquered the belligerent spirits, but won them as friends. Nothing appeals so strongly to an Indian, in whom the savage instinct is always dormant, as a brave and courageous act.

During last season's work Mr. Curtis was initiated into the sacred mysteries of the rites of the Snake Priests of the Hopis. This could be done only by adoption, and he is now a son of these quaint people. He lived with them during the Nine Days' Ceremony; went with them on their quests for snakes, and to find whether his heart was good, each snake, when found, whether Bull snake, Blue Racer or Rattler, was hung around his neck. If the heart is not good the snake will bite, and as he came back to tell his experience, his heart must be good.

In the publication of his work Mr. Curtis will present the most exhaustive history of the Indians of North America which has ever been undertaken. It is to be completed in twenty volumes and twenty portfolios, each volume containing seventy-five illustrations for the accompanying thirty large pictures, all in photogravure. The proofs which have been received from a number of the plates show a remarkable fidelity of reproduction and tone value, so characteristic of the Curtis prints. The subscription-price is \$3,000, and Mr. Curtis has already secured quite a number of subscribers, sufficient to warrant him in pro-

ceeding. Two volumes will be published this year — the whole work to be finished in from five to seven years. President Roosevelt has written the introduction, and the work is highly endorsed by Commissioner Leupp, of the Indian Department.

The studio in Seattle is the home of Mr. Curtis and Mr. Curtis the Indian. But a short time ago Mr. Curtis said that he had almost forgotten that chemicals were necessary for his work. All the plates are sent there from the field for development, and all the work is done there.

Mr. Curtis was long known as a progressive and successful portrait-photographer, and enjoyed the patronage and confidence of the best of Seattle's people. His work was ever marked by strong individuality, and his personality won him many staunch friends. Later he became the pioneer in half-tone engraving in the Northwest, but abandoned that to take up the Indian work. It was not only the loyalty of his friends and patrons that enabled him to keep a firm hold on his business in spite of many long absences in the field, but his studio had the reputation for a high standard of excellence. That the standard is maintained is attested by the success of the studio.

In a city at so great a distance from the centers in which it is possible to see the things which other serious workers are doing, it is difficult to keep abreast of the times, and our greatest ambition is to keep out of the ruts and not sink in the mire. Our desire, like that of all progressive workers, is for originality and individuality, and we are continually stimulated to increased effort for new effects. The colored pigment print was the outgrowth of this desire, and when Mr. Curtis showed these in the East, two years ago, not knowing what had been accomplished along these lines, the reception accorded them was most flattering and gratifying. Some of the most celebrated collectors become purchasers, and in such triumph the studio feels justified in sharing the honors with Mr. Curtis.

[Mr. Muhr is the capable and faithful manager of the Curtis Studio at Seattle, Wash.—ED.]



GEORGE SIEGFRIED

THE SCHELDE NEAR ANTWERP

Theatrical Photography

ARTHUR PAYNE

A recent issue of "The British Journal of Photography" contains a very interesting article on photographing stage scenes during public performances with no other illuminant than the ordinary stage-lighting. This remarkable achievement is accomplished by the use of a 1 to 50,000 solution of pinacyanol, as a super-sensitizer, which not only increases the sensitiveness of plates bathed in it, but renders them more sensitive to red than to blue light. When one considers, therefore, that the light usually reflected from the stage is strong in red and yellow rays one will realize why the red sensitiveness of a pinacyanol-bathed plate is of great value in theatrical photography. That the speed gained is considerable, is evidenced by the fact that Mr. Payne has secured good negatives of scenes illuminated by yellow light only, by means of focal-plane shutter-exposures of from $\frac{1}{4}$ to $\frac{1}{10}$ second with a lens working at f.3. We quote below portions of Mr. Payne's article.—ED.

WHEN preparing these bathed plates, my procedure is to bathe them for three minutes in the following solution, which should not be used more than once:

Pinacyanol (1 in 1,000 alcohol).....	2 c.c.
Distilled water	100 c.c.

The plates are then well washed for three minutes and wiped surface-dry by means of a pad of damp cotton, and then dried.

For this work I find it is quite safe to use a faint green safe-light, which may be of such a low luminosity that it is impossible to read the figures on a small developing-clock when it is held close to the lamp, but which gives sufficient light to enable the operator to work in comfort, even at some distance from the lamp. This does not necessarily mean that the pinacyanol-bathed plate is insensitive to green light, but rather that the physiological effect of green is much more useful than any other color. For instance, the eye itself is rather insensitive to red, so that it naturally follows that it is necessary to use a considerable amount of red light in order to be able to see by it at all. The power of the green light may be reduced to a lower degree than any of the other colors and still retain its usefulness as an illuminant. Or, to express this differently, if the luminosity of three safe-lights, red, yellow and green, were adjusted so that they are equally useful as illuminants, the candle-power of the green light would be less than that of the yellow, while the red light would have the highest candle-power of the lot.

Do not, however, be tempted to use an unnecessarily large amount of green light, but keep the light turned down to the lowest point consistent with its value as an illuminant, and shade the plate as much as possible even from the action of this faint light. It is hardly necessary to explain that the eyes are more sensitive to this faint light after the operator has been in the dark-room for a few minutes, so that he should make his preparations by means of a fairly strong green light and then lower the light when the plates are bathed or developed.



CHAS. VANDERVELDE

THE MOWER

My dark-room lamp is fitted with a glass tank of an internal thickness of one inch, which is filled with the following solution:

Green Safe-Light

Acid green	2 parts
Naphthol green	2 "
Tartrazin	15 "
Water, distilled	300 "

Dilute one part of this stock solution with twenty-five parts of water, and use it in a one-inch thick cell. A sheet of ground-glass should be placed in front of the safe-light in order to diffuse the light.

It is not really necessary to dry the plates after they are bathed and washed, for I find from sensitometer tests that there is no appreciable difference whether the plate is exposed in a dry state or immediately after the surplus water has been wiped from the surface of the plate in the manner already described. Possibly in the case of the wet plate a trifle more density is obtained with equal development than when the plate is exposed dry, but otherwise there appears to be no difference in the results. I have also tested the use of wet plates in the theatre, and I find that they give good results after they have remained in the plate-holder for forty-eight hours. Three hours elapsed between preparing the plates and exposing them in the theater, and forty-five hours between exposure and development. Contrary to what might be expected, these wet plates work free from fog and more cleanly than plates which have been dried fairly rapidly. It is advisable to soak the wet plates in distilled water for ten minutes before they are developed, so as to avoid the appearance of uneven density, due to uneven development, and caused by the plates partially drying in the holders. It is, of course, better to use the plates when dry, and this I recommend whenever it is possible to prepare them in time to allow of their drying before they are placed in the plate-holder, but it may be useful to know that on special and unforeseen occasions they may be successfully exposed without waiting for them to dry.

The edinol developer that I recommended for use in my previous paper was made according to the formulæ given by the makers of edinol, but it apparently contains an unnecessarily large quantity of sodium sulphite, and I find that edinol may be successfully used when compounded as follows:—

Edinol Developer

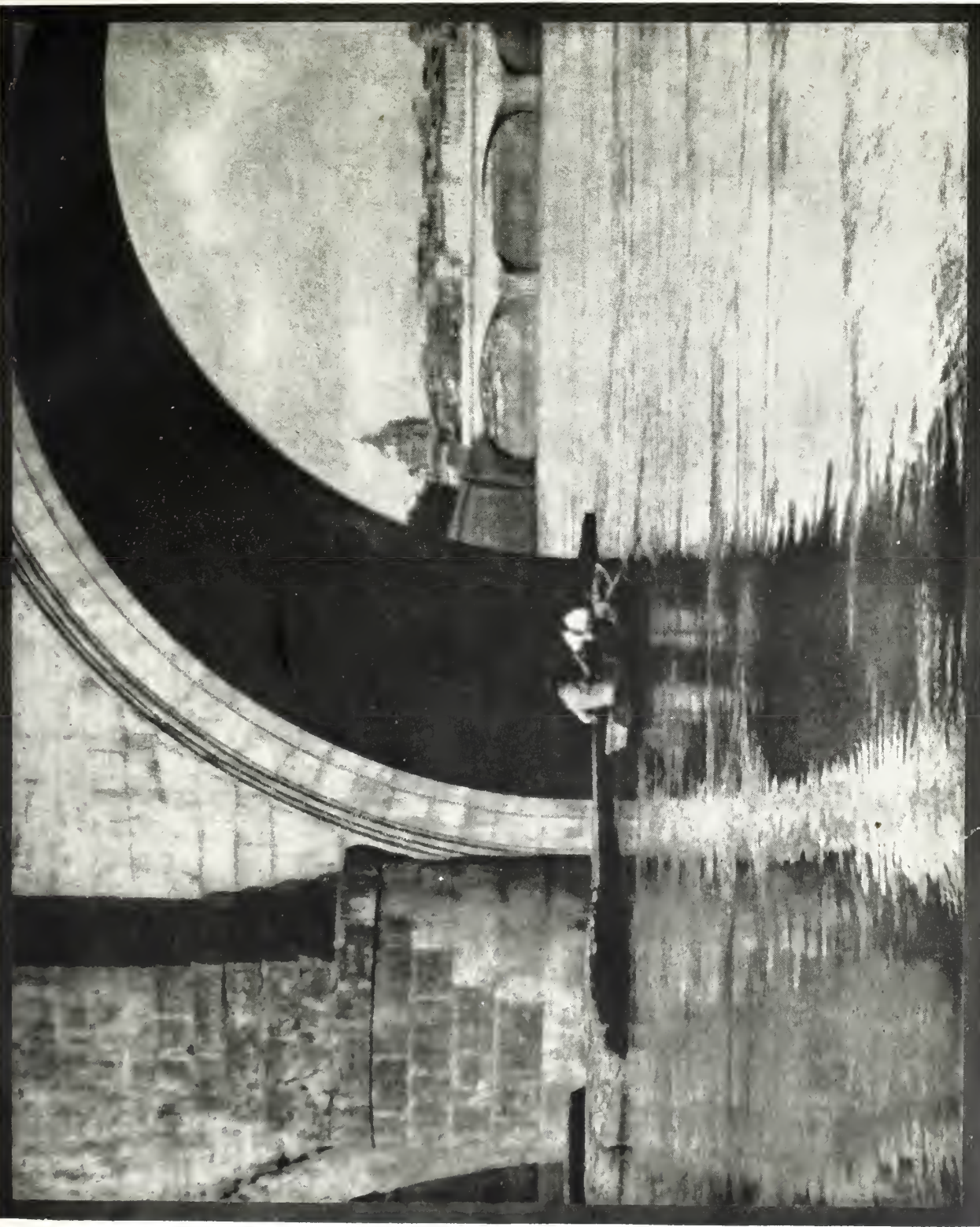
Sodium sulphite, cryst.	1 oz. avoird.
Edinol	50 grains.
Sodium carbonate, cryst.	1 oz. avoird.
Distilled water	10 fluid oz.

Dissolve the salts in the order given, and develop the plates for five minutes at a temperature of 75° F.

Taking into consideration the great red sensitiveness of pinacyanol-bathed plates, and the preponderance of red and yellow in the average stage-lighting, it ought not to be very difficult to obtain successful three-color negatives of stage scenes with a comparatively short exposure. Of course, they could not, at present, be obtained during the public performance except under very favorable circumstances, such as would arise when the theater management would consent to hold the curtain for five or six seconds on the "call" at the end of the act, and the performers would pose for the photograph. Taking into consideration the value of color stage photographs as an advertising-medium for the proprietors, they might arrange for a special production in order to obtain a series of three-color photographs of a pantomime or other spectacular play. I offer the idea to those who are interested in this work, and suggest that it is a proposition which might be brought before the notice of theatrical clients.

THE BRIDGE OF ST. ANGELO, ROME

ALVIN LANGDON COBURN





WM. S. RICE

AN APPROACHING STORM ON ALPINE LAKE

With a Camera in the Sierra Nevadas

WILLIAM S. RICE

WE had always been looking forward to a camping-trip which would combine the charm of picturesque scenery with that of a bracing climate. Insisting from the start that our camp must be within easy reach of snow-capped peaks, we were yet unwilling to locate at such an extreme altitude that we should miss, entirely, the warmth of summer. To find the ideal place which should combine all of the above-mentioned features was not an easy task — especially to novices who were not acquainted with the lay of the land, so to speak.

My reasons for preferring a high altitude were twofold: I wished to be near the region of eternal snow, so that the nights should be cool and bracing and invite sound sleep, and the noontide not too hot for comfort or the exertion of mountain-climbing. Moreover, I wished to make a study of the mountain scenery and flora with the aid of the camera; and the thought of lugging a heavy instrument through the brush a great distance from camp did not appeal very strongly to my æsthetic sense.

Our party consisted of the "Photographer," his sister, the "Cook Lady" and the "Boy." The ideal spot that we at last decided to select for our camp-site was located on the banks of Bear Creek, a tributary of the Truckee River, about

three miles from Lake Tahoe. A mountain stream, clear as crystal and cold as ice, sang us to sleep at night with its crooning lullaby, as it hastened on its tortuous course over mossy rocks and through deep, amber-colored pools to the Truckee beyond. We were fortunate in being enabled to make our entire journey aboard the iron horse, instead of the slow-moving stage; and in consequence we reached our destination with little or no discomfort *en route*.

What fun it was unpacking our outfit, arranging our table and cupboard and, finally, erecting the tents! We selected a level spot under a giant tamarack-tree for our dining-room, which was carpeted with a thick layer of brown pine-needles. The babbling brook flowed near-by and all about us towered giant silver firs, tamaracks, yellow pines and quaking aspens.

Of course the Cook Lady was anxious to get her domain in working-order the first thing on the program; so, after the tent-sites had been selected and piles of fir boughs had been gathered for mattresses, she insisted that "all hands must get busy on the appointments for the culinary department." First, the little sheet-iron camp stove was placed upon a firm foundation made of boulders. That was the Boy's duty. The stove seemed so diminutive that we were nearly convulsed with laughter at its absurd appearance. It so resembled a child's toy that we were doubtful as to its practicability. After the merriment had subsided the Boy offered the next suggestion: "Now for the table and cupboard!" he said, for he was beginning to feel the first pangs of hunger that the mountain climate was rapidly developing in all of us. A table was made by hammering four stakes





WM. S. RICE

CALIFORNIA AZALEA

in the earth and nailing one of the packing-boxes over them. When covered with a square of oilcloth it presented a real homelike appearance.

Our larder was likewise constructed from a packing-box which was nailed to a tree and stocked with innumerable tins of corned beef, salmon and vegetables. There were trout in the stream, and the Boy, by being energetic with his rod, supplied our table with many a mess of the speckled beauties.

What jolly times we had evenings, when the various campers who were located in the vicinity gathered around our big camp-fire to relate the varied experiences of the day! During the course of the evening, like a strange voice in this wilderness, came the strains of "Tenting on the Old Camp-ground" and "In the Vale of Shenandoah" from the brassy throat of a phonograph which one of the campers had thoughtfully included in his outfit. Its notes sounded strangely "civilized" to our ears, accustomed only to the murmurings of the brook in that vast wilderness, but there were times when it enlivened odd moments that otherwise would have been rather dull.

There were two cameras in our party, and a good store of Medium Isochromatic plates for the 5 x 7 instrument and films for the 4 x 5 snap-shot camera. I chose this special brand of plates, anticipating snow-scenes and grand cloud effects, and I also included a color-screen in the outfit. The portrayal of wild-flowers in their native haunts was another purpose for which I intended using them during this outing in the Sierras.

Several delightful excursions were made, during various times of the day, up the mountain-sides, where, on bleak, rocky ledges, wild-flowers of indescribable hue grew in the greatest profusion. As we climbed ever higher, the grand panorama of valley, pine-fringed ridges, rocky crag and snow-crested peaks spread out before our enraptured eyes like a vision of Paradise; and a Paradise for the camerist it proved to be in reality.

On one of these trips we wandered up the ridge where, hemmed in by giant granite battlements, nestled a chain of five mountain lakes fed by the melting snows and reflecting, like mirrors, the intensely blue sky and the surrounding forest of fir and pine and the grand white peaks beyond. At the sight of all this wealth of picturesque beauty wherein "compositions" were made to order while one simply waited to refill one's camera with plate-holders, my enthusiasm knew no bounds, and I exposed plate after plate in a reckless fashion, using the color-screen where clouds, or shadows in the snowbanks, were wanted in the negatives. The atmosphere was intensely pure and the light powerfully actinic in these great altitudes, consequently no exposures were made longer than one-fifth of a second when the color-screen was used, and one twenty-fifth of a second without it. Such exquisite pictures as these lakes made! Nestling there, with their grand setting of still higher ranges back of them, with fringes of verdant pines and melting snowbanks down to their very brink and imaged in their sapphire waters, these mountain lakelets were truly gems of the Sierras!

Out on barren, granite ledges we found the mountain flowers in bloom, reveling in the vernal season which, to them, had just begun, although according to the calendar it was then mid-July. In the places where snowbanks had recently been we gathered dainty white violets, alpine phlox and heather, and photographed them in their native surroundings. In the lush, green meadows of springy depressions moistened by the melting snows were thickets of alder and willow amidst which gleamed the brilliant-hued alpine lily, of a deep orange vermillion, monk's hoods of cobalt blue, while columbines and shooting-stars disported themselves in the damp grasses. These shooting-stars are some of the prettiest and daintiest of mountain flowers; and it seemed to us that Nature must have taxed her skill to its utmost to produce something unique when she fashioned them. In the same locality we found several members of the orchid family. Most beautiful was the milk-white rein orchis, which reared its frost-like spikes effectively against the plush-like green of the mountain meadows.

Out on exposed, sunny slopes I came across a colony of mariposa lilies, sunning themselves airily and daintily upon their wire-like stems. The delicate petals were cream-colored, with a triangular blotch of lilac; and a hairy spot of yellow near the base formed a cup wherein insect guests were frequently found regaling themselves upon the nectar. We found some of these lilies afterward that were yellow, claret, magenta and variously blotched with crimson and purple. In the thickets we found the pure and exquisite Californian azaleas in bloom. Their dainty Japanese forms relieved against their glossy, green foliage immediately set my photographic pulses leaping with sheer admiration for



WM. S. RICE
MOUNTAIN IRIS
BRAKE FERNS



their wonderful decorative possibilities. Their dainty perfume, so characteristic of the damp woods, seemed distilled from the very leaf-mould at their feet!

The early morning hours were selected for studies of this flowering shrub — a time when the air was perfectly still. After focusing sharply upon the main spray of interest, which, by the way, required considerable time to decide upon, the diaphragm was stopped down to 32, or until all portions of the main spray were brought out sharply and clearly upon the focusing-screen; then waiting, bulb in hand, until not even a zephyr stirred the leaves or flowers, an exposure of one-fifth of a second gave the desired results. Groups of ferns, in dim, shadowy thickets where the light flickered through in innumerable spots, just ruinous to time-exposures (in which they look like patches of snow or cotton-balls), were best photographed on hazy days when the light was evenly distributed. Stopping the lens to about 20, an exposure of 10 seconds was satisfactory for places with medium illumination; for others more in the gloom of fir shade 15 to 20 seconds were given. I secured several very pleasing results wherein a faint ray of light played upon the most prominent ferns in the foreground of the composition, thus relieving it a bit of monotony.

The portrayal of wild-flowers in their native environments is a photographic pastime less exciting than that of depicting the doings of wild animals and birds, but the enthusiastic Photographer and the Boy found plenty of exciting experiences clambering over the edges of slippery rocks and getting their feet soaked in rushing mountain torrents to satisfy them for days to come. The photographing of the flowering shrubs did not present so serious a difficulty, and was found to be comparatively easy to manage; but with the low-growing blossoms like the snow plant, mountain iris, orchid and mariposa lily, great patience and perseverance were required in the focusing. Focusing at so close a range and so low an angle, and the wind, that ever-present enemy of the botanical photographer, were the three main factors to contend with; so, taking every drawback into consideration, we had all the excitement that we bargained for.

Nature here in this picturesque place was so primitive, so fresh from the hand of the Creator, that we could almost feel her pulses throb on every side. We felt that this photographic Eden was almost a place where gnomes and fairies must hold their carnivals — an enchanted forest, as it were, where the creatures of the wood, the birds of the air and the vivid blossoms at our feet, lived an ideal life without fear of being molested.

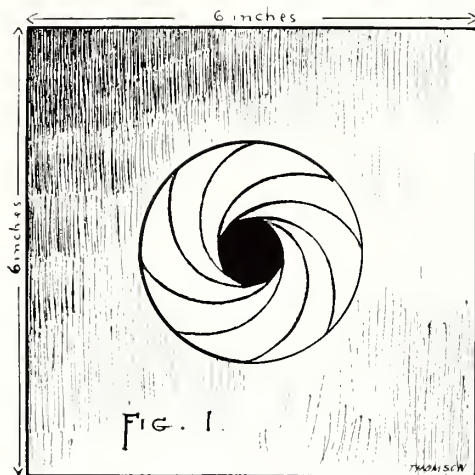
In that region of blue skies, cool air and high altitude, many were the feats of physical endurance that we accomplished, which at that season in the lowland valley would have been simply impossible. With perfect days, cold, bracing nights, delicious mountain ozone and the purest of water, we felt that living the free outdoor life and "roughing it" was doing us all infinitely more good than all the tonics in the world.

When the day came for us to break up camp and return to the haunts of men, and to the every-day duties we had laid aside all these blissful days, there was a genuine regret felt in all our hearts.

Mirror Reflecting Cameras Antique and Modern

JAMES THOMSON

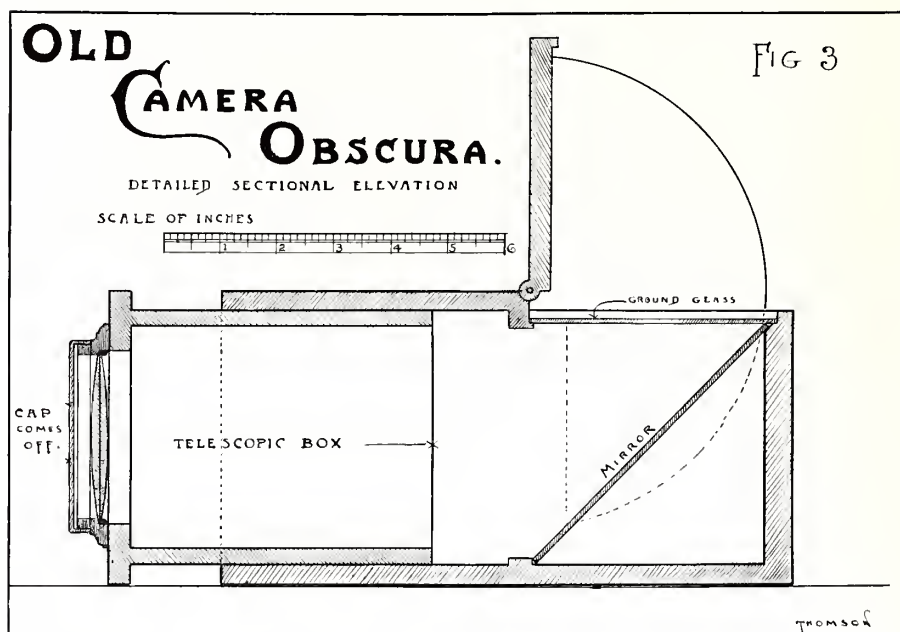
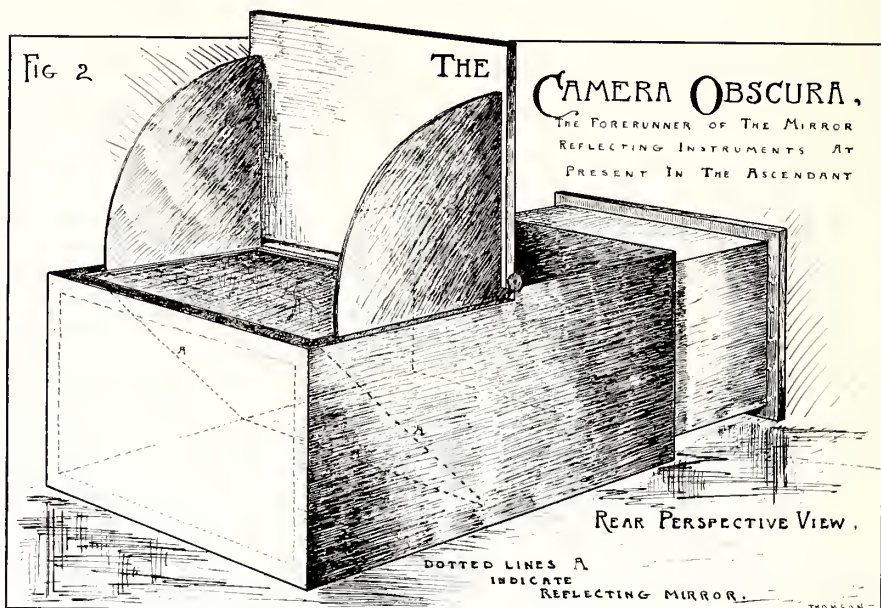
NOT many of the present generation of photographers are familiar with the *camera obscura*, that primitive instrument with which the fathers of the art were obliged to content themselves. In the year 1816 we find Niépce describing his camera as a box six inches square, with an extensible front carrying the lens, and an iris diaphragm, identical, in principle, with those in use to-day, as examination of an illustration will disclose, the camera being at present in the Chalon Museum, France.



A NIÉPCE CAMERA OBSCURA
SHOWING IRIS DIAPHRAGM, 1816

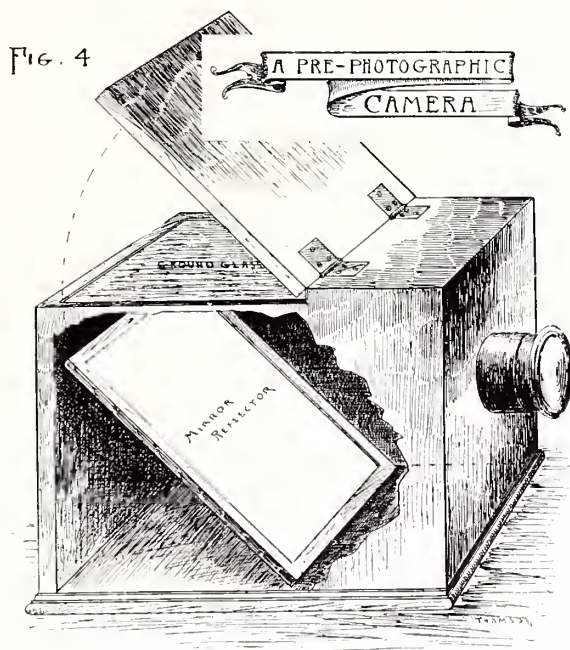
The invention of the *camera obscura* we owe to Giambattista della Porta (1540-1615). It can therefore be seen that mirror-reflecting instruments were in use many a long year before the advent of photography. Beautiful as the photograph sometimes is, we may be sure the image, as revealed on the ground-glass, in all the glory of color, was still more beautiful. Man, beholding the glorious image on the ground-glass, sought for some means to fix it. Hence the invention of photography. The artist, moreover, seeing the image, found in the *camera obscura* an aid to carrying out his ideas. Thus with pen or pencil he could delineate the image of nature thrown on the ground-glass, much as do children of the present generation draw on the transparent slate.

Some nine years ago chance put in my way an odd-looking box, which I quickly recognized as an old-time camera. Part of a New England attic's treasure, it had been all but discarded, for no one in charge had the slightest notion as to its original purpose. My own interest in photography, however, was sufficient



to rescue it from the ash-heap, and, as may be seen, the little pains I took in repairing it amply repaid me.

In plan this camera was a box within a box, one box sliding within a larger one. At the front end was a three-inch double-convex lens, while at the rear, on the top, was a removable piece of ground-glass. Inside of the box, immediately beneath the ground-glass, was a mirror placed at an angle of 45° . When the camera was pointed at an object, the view, first reflected in the mirror, was thrown upward on the ground-glass. Thus, by removing the latter and substituting a sensitive plate, a photograph of the scene could be taken.

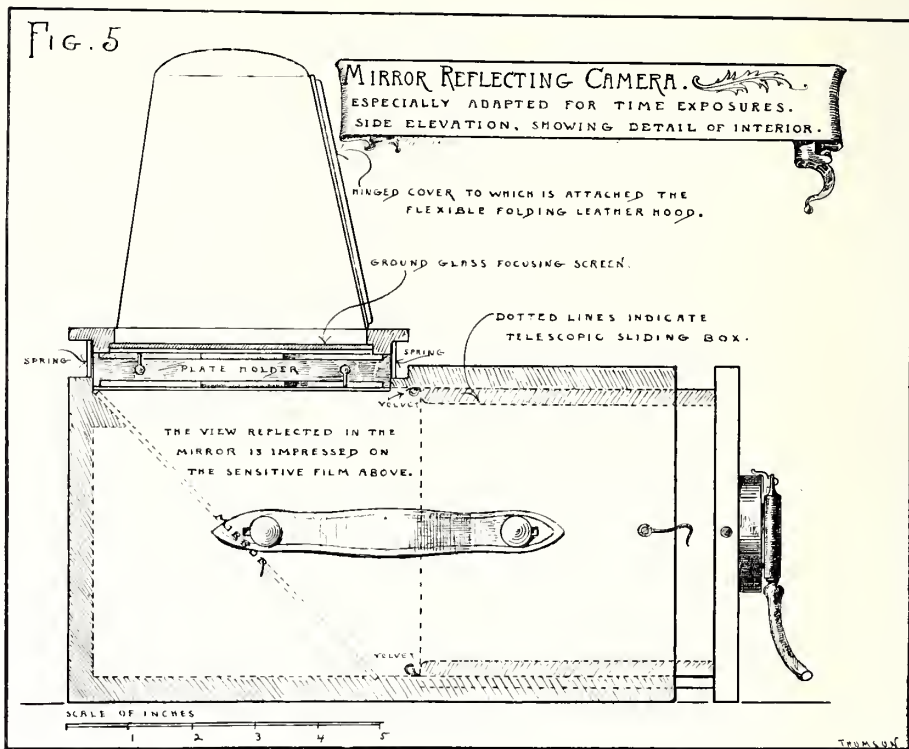


The entire affair was remindful of the present-day view-finder on the average camera. In fact, the finder of to-day is but the *camera obscura* in miniature.

Much dilapidated as was the camera, I made the necessary repairs, and, simply to satisfy myself that the deed could be done, I took some very fair pictures with it.

Advanced workers are familiar with the present-day instruments of the reflecting type, cameras almost indispensable where rapid movement is involved. Some have claimed such cameras as a proud asset of twentieth-century achievement, when, in truth, the mirror principle is very old — abandoned for a time, only to be taken up again, and in an improved form.

The high cast of present-day reflecting-cameras operates against their employment. As there is no patent on the mirror device, it seems singular that some manufacturer does not place a reflecting-camera on the market at a popular



price. Looking at the image on the focusing-screen on the top, we see it the full size of the plate employed, and right side up too, not inverted as is the case with cameras of the usual kind. It is, therefore, not a difficult matter to arrange for the use of a plate on the top of the box, instead of at the rear as is the accepted fashion, the reflecting-feature, of course, being also part of the scheme. In cameras of the cycle type the ground-glass focusing-screen, being placed at the rear of the box and actuated by stout springs, gives way for the insertion of the plate-holder. Once the latter is in place, the sensitive film of the plate will be on the plane formerly held by the face of the ground-glass. Such being the case, to arrange for a camera of the reflecting-variety one needs but change the ground-glass from the rear end of the box to the top. Nor would it require much ingenuity to arrange matters so that the act of inserting the holder would operate to close the shutter, when, as might sometimes happen, it were inadvertently left open.

The camera here pictured gives barely a suggestion of its possibilities. It is intended solely for timed exposures, although with little difficulty it could be arranged for rapid work also, in which case the plate-holder would be, as is usual, at the rear, and the mirror be made to vanish upward, as in the case of the Reflex. In that arrangement some sort of roller-blind shutter, working close to the plate, would be imperative.

The focal length of the lens used necessarily dictates the dimensions of the box, in so far as length is concerned. In no case should the focus be less than one and a half times the long way of the plate, while twice the length of the plate would be better for pictorial photography. The focal length of the lens we measure from the lens to the mirror at the top of the incline, and not at the bottom as some might imagine.

The proposed camera is intended for a 4 x 5 plate, and, as can be seen, the view to be taken landscape fashion. For upright pictures the plate-holder would be arranged for insertion from the rear instead of the side. The mirror, however, must always be placed at the same angle, 45° .

While we have arranged for the old-time telescopic box, the regular, present-day bellows may be substituted. The flexible leather portion of the hood attached to the cover over the focusing-screen is arranged so that it will be snugly disposed of in the space over the ground-glass. It is somewhat difficult to explain on paper how this may best be effected, but examination of some similar instrument now in use may disclose the secret.

While I intend to construct some such mirror instrument as is here suggested for my own use, I here present such ideas as I have for the benefit of others. In my own case, I purpose using a rapid, rectilinear lens, but a single achromatic objective would answer reasonably well.

As the high cost of cameras in which the reflecting-mirror is a feature is a bar to their extended use, amateur workers should feel encouraged to make something of the kind for themselves, especially as in the camera of the mirror variety the difficulties are no greater than in the ordinary type. No patent stands in the way, the reflecting-mirror placed at an angle of 45° , as here shown, being older than photography itself.

My camera is especially arranged for time work. All the cameras of the mirror-reflecting type already on the market are adapted to speedy work. The use of an anastigmat lens of short focus enables one to work at a large aperture, and while the resultant pictures are of excellent quality, they have the faults inherent in all of the short-focus product. In pictorial photography a long-focus lens is essential, and for such a lens we must have a camera with a long draw. The average low-priced camera has too short a draw, so we may well make a long-draw box of the kind here pictured for a change.

Speed is the desideratum in the mirror camera, as a rule; but where time exposures alone are involved the need of seeing the view, up to the moment of opening the shutter, is not so apparent. Once the focusing has been effected, there is ample time to change the stop, when necessary.

In the early days the cap was constantly employed; nor is there now any reason why we should not resort to it more than we do, under-exposure being still common enough. Not one in a dozen gives sufficient exposure, notwithstanding rapid plates and perfect lenses. Plenty of time, therefore, should be accorded the focusing and exposure, quite regardless of our means of shutting off the light.

Laymen, as a rule, take the greatest pleasure in looking at the variegated images presented for their edification on the ground-glass screen of a mirror-reflecting camera. For these picture lovers, however, no such instrument as the old-time *camera obscura* can now be bought. To view the passing scene of a busy, modern city street through the medium of the ground-glass of a reflecting-camera is a pleasure to many, appealing as it must to the invalid and shut-in, particularly. There is no missing of the hair from a focusing-cloth, while the view is, as in nature, right side up.

The accompanying illustrations may require a word. Fig. 1 needs no explanation, Fig. 2 is a rear perspective view of my find, while Fig. 3 is a detailed plan of same.

Fig. 4 shows an eighteenth-century pre-photographic instrument, and Fig. 5 embodies some ideas for a mirror-reflecting camera where time exposures alone are required. The germ of the idea being here presented, suggestions for improvements are in order.

While the pictorial image as presented to our vision on the focusing-screen of the reflecting-camera is right side up and not, as is customary, inverted, it should be understood that the right and left of the view are reversed. Photographing, therefore, with the plate on top of the box, as suggested, involves such a condition, which, for ordinary pictorial purposes, would not answer. This difficulty, however, may be easily overcome by the simple expedient of reversing the usual order of loading the holders. We simply are required to turn the sensitive film in instead of, as is customary, out, thus photographing through the glass.

Workers who have inadvertently done this very thing assure us there is thereby no falling off in the quality of the resultant negative. In fact, some go so far as to claim thereby certain benefits, such as less liability to halation, etc. We must, however, take cognizance of altered conditions in arranging focusing-screens, lest the image be not as sharp as it ought to be.



GEORGE SIEGFRIED

THE PIER AND THE STEEN



J. E. MOCK
LADY VERE DE VERE



Ozobrome in Pictorial Photography

H. D'ARCY POWER, M.D.

PREVIOUS writers have already acquainted the readers of PHOTO-ERA with the nature and mode of working Ozobrome. I purpose in this communication to say a few words on its relation to pictorial work, together with some hints based on experience in its use.

The great desideratum in a process to be used for pictorial purposes is that it shall permit the product of the negative to be modified. Furthermore, it is desirable that it reproduce without loss the full gradation of the negative and allow of choice in color and surface. Let us consider these points a little in detail. The pictorialist desires to produce a picture, that is to say, an arrangement in masses, lines and possibly color, that shall be a source of pleasure to the cultivated taste; if he be also an artist, he will in addition desire to express his own mental conception of the thing portrayed. The pictorialist's aspirations are very occasionally realized by a direct transcript from an untouched negative — the artist's, never. The best that can be said of the mass of technically perfect negatives is that they yield good drawings and now and then crude pictures — crude because the values are unavoidably false, the massing rarely what an artist would desire, and the great principle of simplicity and unity, without which dramatic effect is impossible, is constantly violated by scattered high-lights and excess of detail. Furthermore, the tonal scale of the negative is too short to make record of what the eye sees and the painter readily transcribes. For example, take a foreground of trees backed by three receding planes of hills bathed in light and note what will become of the distant planes in a straight photograph. Yet the very essence of such a scene lies in the beauty of the distance. Therefore, to produce pictures by the aid of photography, we must be able to correct the negative (a very difficult and usually impossible undertaking) or we must have the power to modify the print, that values may be made true, lost planes recovered, offending high-lights and obtrusive details obliterated, and undesirable lines modified. Much of this is necessary in the interest of truth; more, for the creation of beauty or the expression of the artist's conception. Now all who have sought to use the camera as an artist uses the brush have quickly discovered that, if success is to be attained, the artist must modify the print rather than the negative, and that the only printing-processes that admit of modification, without a crude exhibition of the intervention, are those known as pigment processes. All pigment processes are dependent on the principle that gum, gelatine or some similar colloid substance, when mixed with soluble bichromates, can be rendered insoluble by the action of light and, also, as we shall see, by certain chemical substances. If the gelatine, etc., be mixed with pigment, this latter is immeshed in the insolubilized mass. This mixture of pigment of any desired color and colloid forms the image in all pigment processes, and may be produced on or transferred to any kind of surface, from polished glass to shagreen leather.

All other printing-processes used in photography depend on chemicals that are intimately blended with the texture of the paper, from which they cannot be mechanically removed, but a pigment print consists of solid particles lying on the surface and held thereon only by the gelatine or gummy colloid. Hence, by me-



H. D'ARCY POWER

CITY VISITORS

chanical means, irrigation with water, or abrasion with a brush, the image may be largely changed at the will of the operator. In gum-bichromate this power of modification is unlimited. In the carbon process it is much less, but still very considerable. Ozobrome is practically a carbon process, but more amenable to modification than the ordinary form. Let us examine this statement. The modifications most commonly required are, first, changes in the scale of gradation



WM. C. STARR

A MEADOW STREAM

— that is, the contrasts of light and shade require accentuating or diminishing; second, alteration of certain values, either in broad planes or small masses — for example, one of the picture planes is too light or too dark, or a single object is falsely rendered, a shadow is lacking in depth or a high-light in force; thirdly, foreign lights need eliminating — thus pinholes in the negative give black spots, and false reflections from the curved surfaces of leaves, etc., give numerous scattered high-lights, that are hopelessly false in value and distracting in effect; fourthly, offending lines and masses caused by details that cannot be eliminated from the negative, such as telephone-poles, surface-car rails, etc. Now the first three of these groups are easily handled by the worker in Ozobrome, and much can be done in the fourth group. Let us take a concrete example. The accom-



WM. S. RICE

THE SPINNER

panying picture, "City Visitors," was worked out in advance of the exposure, the location of the leading lights determined, and also the desired position of the dogs. Many were the attempts at inducing these unruly models to occupy their allotted places, and when they did get into line it was impossible to give more than a one-twenty-fifth second exposure. This meant an underexposed negative, short in gradation, with the sky-light too high, the shadows so dense that the limbs of the trees were mere silhouettes, the distance too dark, and many scattered high-lights; furthermore, the scale of gradation was so short that the negative had to be kept thin, with the result of a flat print. Now let us see how Ozobrome can

handle such a negative. A bromide enlargement was made on a soft-working paper, to preserve the largest possible amount of gradation, the printing being carried just far enough to give detail in the high-lights. After drying, an Ozo-brome transfer-print was made. I will give the exact technique, as it differs in points from that of the directions. The bromide print being somewhat flat, a weak sensitizing-bath was used; viz., one to four of water, where in the pigment plaster was immersed for one minute. Next to this bath were placed two trays containing water, and beyond the third tray a sheet of glass with a sheet of blotting-paper and a sheet of thin celluloid lying handy. The bromide print was placed in the third tray, together with a sheet of thin white paper half an inch larger than the print. When limp the thin white paper is placed on the glass plate and the bromide print superimposed face upwards. The pigment plaster is then removed from its bath, passed through the adjacent dish of water and brought in contact with the bromide print, lowering it from one margin and on no account allowing it to slip sideways as it comes down. Over this place, first, the opaque sheet of blotting-paper, then the celluloid, and, holding the latter firmly with one hand, pass the squeegee lightly over the surface, then remove the blotting-paper and, with merely the thin celluloid covering the plaster, squeegee firmly in a single direction. After waiting the usual time, the plaster is transferred to its permanent support and finally developed with warm water. It is at this point that the most important tonal alterations are possible.

In our example we desired to lighten the distance, darken the shadow-masses on the left, and accentuate some of the high-lights on the water and stones, in order to develop a curved line of light passing from the base line upwards and inwards to the point of interest. This is first of all to be effected by the careful and individual development of each of these regions. If the water is very warm, development will occur simultaneously over the whole surface and we shall have no control. So we use water about 90 degrees Fahr., and leave the print in it until the mass is quite soft but not detached. Then, raising the print on a glass or zinc plate, we incline it away from the shadow side and commence development by directing the stream of water on the sunlit distance until all the pigment desirable or possible is removed. To this end, it may be necessary to use water of a higher temperature, care being taken that none of it goes over the shadow-masses on the left. The water used in developing the light center will, in running off, have developed the right side of the picture. If not complete it is now finished and development of the shadow side completed. This is done with water *only just sufficiently* warm to remove the excess of soft pigment. Directly this is effected the further loss is stopped by immersing in cold water. These procedures will have greatly altered the appearance of the print as compared with the original bromide: the sunlit distance is brighter and the light better concentrated; the shadows below the great tree on the left are deeper and the line of high-light striking the bridge on the left and forming an unpleasant line running out of the picture is buried under unremoved pigment. We now need to put in individual high-lights. Owing to the necessarily short exposure, the tree-stems

against the light are absolutely flat. We take a sable hair brush, No. 10, and, placing it for a moment in hot water, pass it along the upper border of the stems, where the light would naturally strike, and immediately the pigment comes away and the limbs acquire rotundity and modeling. This should be done with the picture inclined toward the shadow side of the branches, so the displaced pigment may run in that direction and add to the depth of the shadow. Working in the same way we remove pigment from points along the bed of the stream, so as to develop the line of light we had previously determined on. Our picture is still marred by scattered high-lights. To remove these we wait until the print is surface-dry and then we obliterate them with a little of the pigment dissolved off a piece of tissue by means of hot water. The light in the sky is somewhat too high and competes with the high-lights which accent our center of interest below. A wash made in the same way puts matters right, and we have a print that is much truer to nature as well as more conformable with the principles of pictorial effect than the original bromide from which it was made. The example here used did not require the actual obliteration of any well-marked lines such as telephone-poles; but in cases where this is necessary the best method of procedure is to effect the main alteration on the original bromide. With a little cyanide and iodine reducer, applied in minute quantities with a brush, we reduce the shadows on the offending objects to the general depth of its surroundings. We wash and dry the print and then proceed to darken the high-lights by stippling until they also equal the surrounding values and the object has disappeared. The stippling is done with an emulsion of reduced silver made by adding a little potassium bromide to a few drops of nitrate-of-silver solution and adding a few grains of a developer, such as amidol or metol. The quick way to make it is to wet a dry-plate and then warm it, when the emulsion can be run off into a bottle; a few drops of developer reduces the silver and it is ready for use. This reduced silver acts in just the same manner as the silver of the image and equally reproduces itself on the Ozobrome print. Furthermore, work that appears crude on the bromide is perfectly blended in the Ozobrome. This same solution can be used for spotting the bromide instead of leaving that procedure to the end. In cases where many copies are required this saves much trouble. From the above it appears that we have in Ozobrome, if not the unlimited latitude of gum-bichromate, a plasticity sufficient for most extensive modification. In the matter of gradation it cannot compare with a direct carbon print, but as compared with a carbon print from an enlarged negative it has better gradation; for in making such negatives more half-tones are lost than in the production of a bromide enlargement. As we can make the Ozobromes on paper or canvas of any tint or surface, and, furthermore, the colors now on the market are open to modification by the usual carbon toning-processes, it is evident that we have all the elements for the successful pursuit of pictorial photography on a basis of simplicity hitherto unattainable. To these facts must be added the great boon of easily obtaining a large picture from a small negative. There are also many other possibilities latent in this process to which I cannot at present refer.

EDITORIAL

Fraud Upon the Eyes

IT is a generally admitted fact that in the nervous eagerness to keep pace with hurrying events we Americans lose sight of health, safety and education. One of the chief things so sadly neglected is the care of the eyes. A whole volume could be written dealing with the constant abuse of the blessed gift of sight, and the thoughtless methods adopted to cure or alleviate resulting troubles.

It is no uncommon thing for well-to-do persons to purchase eye-glasses or spectacles which, on account of their inadequate material and abominable workmanship, are unfit for use. The amount of injury they impart to the most precious of the senses is very great, and frequently results in total blindness. This state of things is due as much to ignorance as to a false idea of economy; for, were persons really aware of the danger they incur when buying glasses which, instead of correcting visual defects, simply aggravate them, they would first seek reliable advice on so serious a matter as the eyes.

But, happily, the science of ophthalmology has made wonderful progress in recent years, and diseases of the eye, formerly beyond the possibility of cure, to-day yield easily to the rare skill of the oculist. More care than ever is exercised also by the optician in constructing and adjusting eye-glasses, and he should work strictly in harmony with the oculist who prescribes the formula for the glasses to be worn by the patient. Let it here be remembered that it is not always safe to entrust to the optician the important task of examining the eyes and then supplying glasses for them, for he is liable to err in his judgment and thus make matters worse. Almost any person should be able to afford the moderate fee due the oculist for a scientific examination of the eyes, and there are dispensaries — in charge of able specialists — for the impecunious.

But another menace to the safety of human sight is the very cheap and inferior opera-glass, few people realizing the destructive power that lurks within some of these dainty and handsomely-mounted instruments. The low price demanded for these baubles (\$2.00 to \$3.00 each) little more than pays for the mother of pearl, which forms the chief attraction, and the cheap labor spent upon them — for they are “made in France” — whereas the principal (optical) element, the lens, has little or no practical value.

There may be some excuse for curbstone peddlers to carry a line of cheap optical goods, partly due to the lack of technical knowledge of their properties; but there is positively no reason why opticians should engage in the traffic of these breeders of astigmatism and muscular weakness, and one naturally does not expect to encounter impositions in the stocks of such merchants. We look upon the sale of such wares as nothing less than a crime, and will gladly support any movement which shall put a stop to it. If persons are afflicted with weak eyes, so that they cannot fully enjoy a theatrical performance, let them first ascer-

tain if they require eye-glasses, for opera-glasses are not intended to take their place. If an opera-glass is desired, let the first thought be its optical properties, rather than the consideration of its external appearance. An important point to be remembered in this connection is that the distance between the eye-pieces (from center to center) *should correspond exactly with that of the pupils of the eyes* — technically known as “the interpupillary distance.” This item is, therefore, of serious import, and should be as familiar to a person as his height or weight. The average interpupillary distance in men is $2\frac{3}{8}$ inches; in women, $2\frac{1}{4}$ inches.

The opera-glass thoughtfully provided by the management of a theatre is a manifest convenience, but unfortunately it fits the eyes of only a relatively small number of patrons. The difficulty will be remedied when the variety, known as the jointed bar opera-glass, is installed. A scientifically-made glass of this type, in plain, japan mounting, retails at about \$8.00; the kind in ordinary fixed mounting at not less than \$4.50. The increase in price represents the quality or character of the mounting, or workmanship of superlative excellence as characterizes the productions of the world's leading optical firms.

Our Friends — the Extremists

A GERMAN cotemporary, disturbed by the utterances of certain periodicals championing the cause of the ultra-impressionists, sounds a note of warning to his government. Impressed by their vehement derision of photographic detail, he seems to fear for the safety of art-treasures in the picture-galleries of Berlin, Dresden and Munich, which are rich in works by Dow, Netscher, Mieris, Van der Werff, Preller — masters of a school whose peerless artistry was born of rare devotion to noble ideals. Our nervous colleague appears to regard it as not at all improbable that a band of these fanatics will rush into his country's art-museums, and, à la Carrie Nation, attempt to destroy the objects of their wrath. True, these examples of a charmingly realistic style have not been molested by the disciples of Monet, Pissarro and other master-impressionists; but there is no knowing what may be expected from a zealot incited by the malodorous exhalations of putrid gum.

It might be well, here, to ask a question or two of these wanton destroyers of photographic detail. What satisfaction, if any, would one of them derive from a musical performance in which the intonation was impure; notes omitted, here and there; rhythm distorted, and other offences committed? And music is one of our sister arts! The same laws that govern music govern the other creative arts: poetry, painting, sculpture, engraving — photography.

Or to go one step farther, how would he enjoy Dvořák's “Humoresque” played on a squeaky violin, or a Chopin nocturne given on a discordant piano-forte? Or, would his soul expand while listening to Gounod's “Ave Maria” delivered in a voice thin, shaky, and off the key? These are the vehicles of expression. They are but instruments — corresponding to the working-tools of the photographer. Give an expert gunner a poor weapon, and he is handicapped — unable to give a good account of himself.

THE ROUND ROBIN GUILD

Conducted by ELIZABETH FLINT WADE

A department especially designed for the amateur photographer and the beginner, in which information, advice and criticism will be freely given. Membership may be obtained by sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, Mass.

THOUGH we have scarcely forgotten the face of winter, yet the year is already in its middle age. July is the calm zenith of the year, and it is special wisdom to rejoice with this brilliant cotemporary while she is here. We ought to go out and enjoy the fragrance of her flowers, lie under her trees, touch with lingering finger her reeds and grasses, and learn the beauty of her floating clouds, her mystic shadows, her elusive moonlight.

July is the month in which the amateur who loves out-of-doors and out-of-door pictures never steps forth on any pilgrimage, however short, without taking with him his beloved camera.

This is the reason why we have chosen landscapes as the subject of our July competition. And we want real pictures — not snap-shots of uninteresting scenes. The pictures must not only be good technically, but have artistic merit.

In order to make an artistic picture one must make use of his knowledge of the elementary principles of light and shade, and so subordinate the insignificant details of the scene as to produce a picture not only correct in its composition, but rendered harmonious by the breadth of its atmospheric effect.

One knows how an artist looks at a scene. He half closes his eyes so as to view the landscape through the veil of his eyelashes. Looked at in this way, the important features of the view are strongly marked, and one sees the broad masses of light and shade, instead of the broken lights and shadows scattered here and there. Now this is what we desire to have our Guilders endeavor to obtain in their landscapes. Get the breadth and harmony of the scene, and as far as possible eliminate or subdue minor details.

Early morning hours are the ideal hours for a July landscape, while the dew lies heavy on the grass and the mists are rising from marsh and meadow. Do not try to make a picture which shall show every separate blade of grass and every individual leaf on a tree, but strive to represent the scene as the artistic eye sees it as a whole, minus immaterial details. By using a large stop and — after first focusing sharply — turning the lens outward just a trifle so as to blend without blurring, one gets an atmospheric effect which many strive for and few obtain.

The question of lights and shadows in a landscape is one of the most perplexing for the amateur to answer or to decide. One point to be remembered is that the principal light should never be in the center of the picture. Observe that the pyramidal form of groupings may be carried out in a landscape as well as in figures, and that this form is almost sure to give an artis-

tic composition provided one composes his picture according to the rules laid down by our masters of art.

BROMIDE PRINTS IN DIFFERENT COLORS

BROMIDE paper, which is a specially good medium for many prints and to be preferred to the rapid gaslight papers, may be toned after developing, and a number of different tones produced.

For a warm sepia the paper is toned or colored in a hypo-and-alum bath. Make up a stock solution after the following formula:

Hyposulphite of soda	5 ounces
Powdered alum	1 ounce
Granulated sugar	1 "
Water	35 ounces

Heat the water to boiling and dissolve the hypo, alum and sugar in it; pour into bottles and let it stand twenty-four hours. Drain off carefully, avoiding as much as possible the disturbing of the sediment at the bottom. To use, take two toning-trays, fill one with the cold solution, and the other with the bath heated to 150° F. or a little hotter. Leave the prints in the cold bath for five minutes, then transfer to the hot bath and let them remain until they have reached the desired tone. The temperature of the bath must be kept up to the degree mentioned, and this may be done by setting the tray in a larger tray and keeping them over a slow fire. After the print is toned rinse in an alum bath made of one ounce of alum to thirty-five of water, wash well and dry. The hypo bath for toning may be used repeatedly.

A beautiful reddish-brown may be obtained by stopping development as soon as the detail begins to appear in the shadows, and after the print is washed and fixed, and while still wet, first intensifying it and then toning it with uranium.

For the intensifier use one-half ounce nitrate of lead; three-fourths ounce of ferricyanide of potassium; twelve ounces of water. Leave the print in this bath till it turns yellow, then wash in running water, and when the image has turned white place it in a tray face up and flood with a solution made of one ounce nitrate of uranium, one ounce chloride of ammonia, and ten ounces of water.

Tones of rich chestnut-color may be obtained by using cupric chloride instead of uranium after the print has been treated with the lead bath. Make up a solution of cupric chloride, one ounce, water, ten ounces, and tone the print in this until



A. W. ENGEL

FIRST PRIZE — A WINDY DAY

it turns a chestnut-color. The whites of the paper absorb more or less of the coloring, so that the print looks as if made by some other process than that of photography.

Green tones on bromide prints may be obtained by immersing the print, after being treated in the lead bath, in a ten per cent solution of cobalt subchloride.

COMPOSITE PICTURES

A COMPOSITE photograph is a photograph of several persons taken one after the other on the same sensitive plate. A composite photograph is a very interesting study, and is often used to illustrate the type of a class; as, for instance, a number of scholars pursuing the same study are photographed one after another on the same plate and the resulting picture is supposed to bring out the prominent characteristic of the pupils. In

the same way a club of athletes, a team of baseball or football players, the members of a golf club, etc., are photographed.

To make a composite picture the heads of the sitters must all be posed in one position and occupy the same place on the plate. A full-face view or a direct profile are the best positions for this kind of picture. To regulate the exposure, the time required for a correct exposure is divided by the number of sitters; for instance, if there are ten sitters, and the time of exposure is ten seconds, then one second each must be given to each sitter.

It is better to use a small stop, as if the plate is a little over-exposed it prevents fogging or hardness in the negative.

One can derive a great deal of amusement from a composite photograph. A picture of half a dozen young ladies taken with hats on gives a

most wonderful production in the way of a "composite" hat.

The children of one family make an interesting composite study. Sir Francis Galton, the man who originated this style of picture, thought that if such family pictures could be made every six months or a year the result, after a number of years, would make a most interesting study of the growth of a family type or characteristic.

AN INEXPENSIVE CASE FOR STORING NEGATIVES

THE stuff of which the case is made is one-inch pine. The dimensions are as follows: height of case, seven and one-half feet; width, seventeen inches; depth, nine inches. This case is divided by half-inch stuff into ten rows of pigeonholes, making thirty in all, each pigeonhole being nine inches high and four and three-fourths inches wide. At the top of the case are two shelves the height of the pigeonholes, but the space not divided, and these are convenient for printing-papers, etc. The case takes up but little room, as it stands in a corner, and my own case stands on the second top step of my back staircase, which, winding at the top, leaves ample space for the case without at all interfering with the passage up and down the stairs.

To protect the negatives from dust a curtain of denim is hung from the top and furnished with hooks and rings so that it may be drawn down tight and fastened in place if necessary.

At the side of the case are hooks from which are suspended the catalogues or indices of the negative. To prevent the straying of the index it is attached to a stout cord, which admits of consulting it freely, but prevents it being taken away from its proper place.

At the top of each pigeonhole is placed the numbers of the plates which it contains, thus: 1 to 50; 51 to 100; etc. One can see at a glance the location of a negative, and it is quite as easily returned to its place when not in use.

The whole cost of the case, including putting it in its place and securing it to the wall by stout screws, was only three dollars, and it has paid for itself many, many times over by its compactness, convenience and time-saving.

When one has a large collection of negatives it is a good plan to index them in three ways: by number, by subject and alphabetically. The negatives are first numbered in the order in which they were made, thus giving a sort of historical data of their appearance. They are then indexed by subjects, putting landscapes, marines, portraits, etc., by themselves, and then indexed alphabetically irrespective of subject.

Having these three indices, one is able to find a certain negative without delay. When making subject and alphabetical indices it is better to use books with indentations showing the locations of the letters. Only the name and number of the negative is written in the catalogue. Anything which one wishes to note about the negative is written on the envelope which contains it.

Monthly Competitions

Closing the last day of every month.

Address all prints for competition to PHOTO-ERA, The Round Robin Guild Competition, 383 Boylston Street, Boston, Mass.

PRIZES

First prize: Value \$10.00.

Second prize: Value \$5.00.

Third prize: Value \$2.50.

Honorable Mention: In addition to the awards, the names of those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be published.

Prizes may be chosen by the winner, and will be awarded in books, magazines, enlargements, mounts, photographic materials or any article of a photographic or art nature which can be bought for the amount of the prize won.

RULES

1. These competitions are free and open to all photographers, whether or not subscribers to PHOTO-ERA.

2. As many prints as desired, in any medium, mounted or unmounted, may be entered, but they must represent the unaided work of the competitor.

3. The right is reserved to withhold from the competitions all prints not up to the PHOTO-ERA standard.

4. *A package of prints will not be considered eligible unless accompanied by return postage at the rate of one cent for each two ounces or fraction.*

5. *Each print entered must bear the maker's name, address, Guild number, the title of the picture and the name of the competition for which it is intended, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.*

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA. If suitable, they will be reproduced, full credit in each case being given to the maker.

SUBJECTS FOR COMPETITION

June—"Interiors, with Figures." Closes July 31.

July—"Landscapes." Closes August 31.

August—"Waterscapes." Closes September 30.

September—"Sunsets." Closes October 31.

October—"Windows and Doorways." Closes November 30.

November—"Genre Studies." Closes December 31.

December—"Home Portraiture." Closes January 31.

January—"Illustrated Poem." Closes February 28.

February—"Mountains." Closes March 31.

March—"Atmospheric Effects." Closes April 30.



W. H. PORTERFIELD

SECOND PRIZE — A WINDY DAY

April —“Decorative Photography.” Closes May 31.

May —“Animals.” Closes June 30.

AWARDS — A WINDY DAY

First prize: A. W. Engel.

Second prize: W. H. Porterfield.

Third prize: D. H. Brookins.

Honorable Mention: Mrs. W. S. Marsh, W. F. Kuehl, J. E. Sponagle, Maud S. Lee, Smith O. Morey.

THIN SKIES

It often happens that a negative of a desirable landscape subject has so thin a sky that it prints a deep gray, much to the detriment of the finished print. To hold back the printing of the sky and equalize the tones, a little sweet oil cut with a little turpentine and then *very*, very slightly tinged with chrome yellow and applied to the back of the plate will retard the printing of the sky. Make a small dabber of cotton put in a piece of cheese-cloth and tied tightly. Dip it in the oil and dab the glass side of the negative over the sky part as evenly as possible, then go over it a second time. The glass is still transparent, but the yellow tinge of the mixture gives just the right color-screen.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.

HERBERT V.—Doubtless the marks on the plates which were exposed and then stored for future development were due to their being placed backs against the films. In replacing exposed plates in a box, if you are careful not to let the fingers touch the film side and to place the plates film sides together as when they are packed, such marks will never appear.

MRS. F. L. O.—A clearing-solution which will clear either a negative or positive from stains or the slight veiling which resembles fog is made of one-half ounce of chrome alum, one-half ounce of citric acid and ten ounces of water. Immerse the plate in the liquid and let it remain for some time. Some negatives take longer to clear than others. Wash well and dry.



D. H. BROOKINS THIRD PRIZE — A WINDY DAY

DAVID B. N.—No; an enlarging-camera is not a necessary adjunct for the making of enlargements. You will find in a recent number of PHOTO-ERA, in the Round Robin Guild Department, a description of a home-made apparatus which does as good work as the expensive enlarging-camera.

CELA G.—A double-pose photograph is a photograph of one person represented twice on the same plate. For instance, the subject may be taken sitting, and then standing, giving the effect of a person standing by himself. One-half of the negative is exposed at a time. Devices to be attached to the camera may be bought for this sort of picture, or one may shield half of the plate, make the exposure and then shield the other half. They are really freak pictures, and only made as a diversion.

J. H. FENTON.—To obtain a soft picture the image is thrown slightly out of focus, the sharp focus being first obtained and then the lens turned either forward or backward just far enough to have the lines blend without becoming too indistinct. This style of picture is for most things far more artistic than those in which a sharp, hard focus is used.

A. F. T.—The new circulars of the Guild will be out very soon, and copies will be sent to all the members of the Guild. They contain all detail in regard to prize competitions, rules of Guild membership, etc.

KATE R.—You can utilize your spoiled plates by making of them blue transparencies. The gelatine with which they are coated is first freed from the blackened silver, and then immersed in a sensitizing-solution such as is used for blue-prints. A formula giving full detail has already appeared in PHOTO-ERA. Enclose twenty-five cents to the office and the magazine will be sent to you.

DELOS C.—Use tinted papers for decorative photography. These you can sensitize yourself according to formulas already published in this department of PHOTO-ERA. They are specially good in decorative flower-studies.

S. L. H. — A restrainer is a chemical which checks the rapid action of a developer. Bromide of potassium or ammonium are the two restrainers most commonly used. Plain water — that is, a diluted developer — will retard the action of the ingredients and bring out a fairly good negative from a much over-exposed plate.

ELLEN K.—Scour the diaphragms well, then place in a solution made of equal parts of copper nitrate and silver nitrate—a forty per cent solution. Let them remain in this solution for ten or fifteen minutes; then dry them in a hot oven, leaving them until they are well blackened.

CARLOS F.—Our new circulars will be issued this month, and will be forwarded to all members of the Round Robin Guild. Many of the illustrated papers purchase photographs of outsiders, though most of the large dailies and weeklies have a photographer on their staff. However, if you have negatives of unusual subjects you will find no trouble in disposing of prints from them. Try some of the magazines.

S. L. L.—Sulphite of soda is used for blackening negatives that have been bleached by bichloride of mercury in the intensifying process. It is also added to alkali developers as a preservative.

B. N. M.—See Round Robin Guild for June, 1903, for directions for salting paper. You can buy paper freshly salted of any dealer in photographic supplies.

DELIA C.—We have already given several articles on money-making with the camera. Our space for correspondents will not allow of an answer in detail, but if you will write and state just how well fitted you are to use a camera, and your special bent in the practice of the art of photography, the editor would be glad to advise you by mail. You would find retouching a very trying work for the eyes, and it is not one that pays so very well unless one is a skilled worker and knows how to retouch without destroying the modeling.

SILVIO PAINI.—For a retouching-medium do not use a varnish, but roughen the film with finely powdered pumice-stone. Put a little of the powder on the negative and rub gently with the end of the finger in a rotary movement. This will roughen the film just enough to give a good "tooth" which takes the pencil well. After the plate is roughened brush off with a soft brush. The powder is applied locally to the places which need retouching. An excellent backing and one easily removed from plates is one ounce of lampblack, one ounce of powdered gum arabic, two ounces of glycerine and eight ounces of water. Brush it over the back of the plate with a wide, soft brush. I should recommend using non-halation plates instead of backing. You can buy a set of tinting-colors designed especially for the coloring of lantern-slides and prints. They are simple to use and very satisfactory in result. If you will send twenty-five cents to the office, a copy of the *Practical Photographer* giving full directions for making lantern-slides and transparencies, and also a special article on the coloring of slides, will be mailed to you.

BERTHA B.—Use one ounce balsam of fir and two ounces spirits of turpentine for a good medium for sealing your lens. Balsam of fir, if not too thick, may be used pure, but it is better to cut it with the turpentine.

Print Criticism

Address all prints for criticism, enclosing return postage at the rate of one cent for each two ounces or fraction thereof, to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing process.

M. M. C.—Your post-cards submitted in the February competition might be improved technically. Aristó Gold cards should be printed a few shades darker than the desired tone, and should not be allowed to remain in the hypo-bath longer than twenty minutes. Therein, it would seem, lies the trouble with your cards; they have remained so long in the hypo-bath that they are considerably bleached.

ELLEN D.—Technically speaking, the print sent by you is from a good negative; but artistically speaking, the picture is a very poor one. The lines of clapboards running across a picture and forming a background for a figure-study is one of the most inartistic effects one could produce in the way of a background, but it is perhaps the most frequently seen, especially in the work of beginners.

ADA SPEAKMAN.—If you can do so, you would find it much to your advantage to take a course in art—not painting, but in the studying of art principles, learning what is meant by the terms used in art and then applying them to pictures. If you are clever with a pencil, a course of black-and-white work would give you wonderful help in the use of your camera in making what you have set out to do, artistic pictures, and of subjects that are worth while. The two prints which you enclose are very good, the one of the child being a specially pleasing study. The lighting of the face is rather harsh, and I would advise making another negative of the same subject and using a more subdued lighting.

BERTHA B.—The picture which you enclose has the horizon line directly across the middle of the picture. In this view you can spare a good inch off from the sky, and this will add ten per cent to the artistic value of your picture. The print will also bear trimming three-quarters of an inch at the left, thus bringing the tree, which is the tallest object in the view, away from the center of the picture.

B. S. A.—In using ammonium persulphate reducer it should be acid and freshly mixed. A stock solution may be made as follows: one-half ounce of ammonium persulphate, one ounce of sulphite of sodium, twenty-four minims of sulphuric acid, five ounces of water. To use, take one-half ounce of stock solution and five ounces of water. Keep bottle tightly corked. If used infrequently it is a wise plan to seal with paraffin wax.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

Conducted by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to Phil M. Riley, 383 Boylston Street, Boston, Mass.

PICRIC ACID IN DEVELOPMENT

A FRENCH photographer, M. Mercier, in his recent work, "Conseils aux Amateurs," states that picric acid in the developer brings out more detail and produces better gradation and density. He recommends the following formula, and also states that the acid is inactive with developers other than hydroquinone or metol-hydro:

Hydroquinone	96 grains
Sodium sulphite	12 ounces
Potassium carbonate	2 "
Eosine	5 grains
Picric acid	10 "
Water to	20 ounces

DRYING BOTTLES

THE photographic worker frequently desires to dry the inside of a bottle quickly after it has been washed. Warming is not satisfactory, for vapor will collect when the bottle cools again, and alcohol for rinsing is too expensive. Probably the best method is to put a quantity of mustard-seed into the bottle and shake well. The seeds will in a short time absorb the moisture and leave the bottle clean and dry.

DRY-PLATES ON GREEN GLASS

MR. W. RIDDELL, Lynmouth, England, has successfully used dry-plates coated on green glass as a preventive of halation, says *Photography*. That plates so coated are absolutely non-halation seems to be proved by an interior photograph, published with Mr. Riddell's communication, including three windows, the exposure given being six seconds at $f/22$ on a sunny day. Mr. Riddell's contention is that light-rays could not possibly pass through green glass during exposure and therefore could not possibly be reflected back again into the emulsion and cause halation. Doubtless American plate-makers would prepare similar plates if requested to do so, and for interior work they seem to solve what has often been a difficult problem.

AN IMPROVISED GASLIGHT-PAPER

SINCE publishing a method of changing P. O. P. into gaslight paper in the April issue of PHOTO-ERA, the following formula has appeared in the *Photographische Rundschau*:

Potassium bromide.....	3 grammes
Potassium iodide.....	1 gramme
Water	1000 c. c.

Immerse the paper in this solution for five minutes, wash for five minutes, remove the excess of water with photographic blotting-paper and dry in the dark-room. Exposure, development and fixation is as usual with gaslight-paper.

BROWN TONES ON VELOX

It is possible to secure excellent brown tones on Velox paper by the use of the following developer:

	A	
Pyro	30 grains	
Potassium metabisulphite	30 "	
Ammonium bromide	30 "	
Water	10 ounces	

	B	
Ammonia (.880)	75 minims	
Water	10 ounces	

For use, take one-half ounce each of A and B and one ounce of water, adding more of A and B as time goes on. It is advisable to develop by an orange glass, as the action of the solution is not very rapid.

POLISH FOR ALUMINUM

AN excellent polish for the aluminum fittings on cameras is prepared as follows:

Stearic acid	1 part
Fuller's earth	1 "
Tripoli	6 parts

A natural, pure white color may be imparted to the aluminum by dipping it into a strong solution of caustic soda or potash, and then into a bath composed of two parts nitric and one part sulphuric acid; from that into pure nitric acid, and finally into vinegar diluted with water. The metal parts should then be rinsed in running water and dried in hot sawdust, after which they may be burnished with a bloodstone burnisher.

A mixture of petrolatum and kerosene oil is an excellent application for protecting the surface of the metal.

PREPARING TRANSFER-PAPER

DRAWING or other paper may be readily prepared for use as transfer-paper in carbon-printing. Allow an ounce of soup-gelatin to swell in six ounces of cold water, and, when quite soft, stand the jar containing it in hot water to liquefy the gelatin. Next dissolve fifteen grains of chrome alum in an ounce of hot water and stir in. The mass has now become thick, and glacial acetic acid must be added little by little, while stirring, until the solution becomes sufficiently liquid for use. Pin the paper to a drawing-board and apply the solution with a soft brush, going first in one direction and then in the other, in order that the paper may be thoroughly covered. With a flat squeegee sweep off the surplus, which may be saved for use, and hang the paper up to dry. Transfer-paper prepared in this manner will keep any length of time, and may be prepared in quantities.

STAND DEVELOPMENT FOR UNDER-EXPOSURES

TIME or stand development is the most powerful weapon in the hands of the snap-shotter who habitually gets under-exposures. When I say "time development" I simply mean prolonged immersion of the plate in the developer—in a developer so compounded that it will work slowly and with evenness. The long and the short of it is, your developer must be very dilute. With developers such as glycin and rodinal, dosing with water leaves them as active as ever, in the sum of their work, but less active in the speed with which the work is done; and—to put the idea popularly, if not strictly accurately—the under-exposed parts of the plate have a better chance of catching up with the more exposed parts, if both of them are being coaxed out at a very gradual rate. In a word, slow development with a dilute developer gives you softer results than ordinary development with a full-strength developer. This might mean too great softness in a correct exposure; but too great softness is impossible with an under-exposure.

A time developing-tank ought to remain permanently on your shelf, so that when you reach what you know to be an under-exposed plate you can put it into the tank to build up its precious modicum of latent detail while you go on with your other work. But do not start developing an under-exposure with a full-strength developer, and then afterwards transfer it to the weak stuff in the tank. I know that one cherishes sneaking hopes that more detail in the laggard under-exposed parts may be enticed into visibility by this means. And the said details may appear. True; but meanwhile the high-lights have been clogged proportionately, which would not have happened had you put the dry-plate into the tank first of all. Time development should be time development all through—not a hybrid, half full-speed development, half prolonged development. If you know which of your plates are under-exposed, treat them patiently from the outset. If you do not know—well, then your case is hopeless.—*The Amateur Photographer, London.*

REDUCTION OF BLUE-PRINTS

THE density of an over-printed ferro-prussiate print may be removed by immersing it in a weak alkaline bath containing a few drops of strong ammonia to the ounce of water. After a short time the print should be transferred to a weak acid bath containing a few drops of hydrochloric acid to the ounce of water.

IN THE DARK-ROOM

I HAVE, since cold weather set in, found many places where the dark-rooms were so located that it was impossible to keep the solutions warm during development. The negatives would start in all right, but before they were one-third developed they would, through the developer growing colder, stand still and refuse to develop.

I have installed in many places a soapstone to be kept warm on the stove, which, when wanted in developing, could be placed on slats over the sink. In this way, the developing-dish could be warmed at any time, and, moreover, the soapstone would make an appreciable difference in the temperature of the dark-room.—*A Plate Demonstrator in the Aristo Eagle.*

SEPIA TONES ON PLATINUM PAPER

DR. P. JACOBY suggests the following developer for producing rich, warm sepia tones on black platinum paper:

Potassium oxalate	100 parts
Ammonium phosphate	25 "
Copper sulphate	1 part
Water	500 parts

The prints should remain at least five minutes in this bath, otherwise they lose considerable in the fixing-bath.

TONING OF P. O. P. WITH PLATINUM

THE following is an excellent formula for platinum toning of P. O. P.:

Potassium chloroplatinite	5 grains
Citric acid	40 "
Salt	40 "
Water	20 ounces

The operation is practically the same as toning in ordinary baths, except that the prints must be washed before toning and again before immersion in the fixing-bath, the strength of which is about two ounces of hypo to the pint of water.

PLATINUM IN THE YUKON

SOME space has recently been devoted, in a number of papers, to the fact that there is promise of a new source of platinum supply in the Yukon district. It is said that the black sand from the river-bed contains the precious metal in the form of fine grains.

A SAFE LIGHT FOR DEVELOPING ORTHOCHROMATIC PLATES

WITH proper care not to expose the plate too long or too near the developing-light, the ordinary ruby-lamp should be safe—except, of course, when using panchromatic or red-sensitive plates. A dark red which is quite safe for ordinary orthochromatic plates may be made of two ordinary dry-plates from which the silver has been fixed out. Stain one of them for ten minutes in a solution containing five per cent of methyl violet and one per cent of borax, and then set away without washing. Stain the other for five minutes in a one per cent solution of naphthol orange and rinse before drying. When dry bind the two together, film to film.

An English worker still further advises that a sheet of double-flashed chromium green glass to lay over the tray while a plate is developing gives additional safety. The reason for it is this: the red glass of the lamp absorbs all the colors except the red, orange and yellow, and the green absorbs the red, orange and a greater part of the yellow, so that the plate is almost in utter darkness.

MAXIMS FOR HANGING PICTURES

FORMAL or symmetrical arrangements are generally to be avoided.

Two pictures which are closely similar in subject, size or style of framing should not be hung side by side, nor one over the other.

As far as possible it is well to avoid having the tops and bottoms of a group of frames in the same horizontal line.

Similarly avoid the sides of two adjacent frames being in the same vertical line.

The interspaces between the frames should seldom be so nearly the same as to suggest an unsuccessful attempt to make them the same.

In general, small pictures and those inviting close inspection should not be "skied" or "floored." It is a common mistake to put the larger pictures "on the line" and the smaller ones above them.

When hanging pictures in a room, it is desirable to arrange as far as possible that the direction of lighting suggested by the picture agrees with the direction of light falling on the picture. Thus in a portrait with a light and a dark cheek, arrange so that the lighted side of the face is towards the window lighting the wall.

A picture with a high horizon (suggesting an elevated view-point) should not be hung along the line. But one with a low horizon may be so placed. The down-hill effect so seldom satisfactorily rendered cannot be properly appreciated unless the spectator's eye is well above the horizon of the picture. This matter of high or low horizons is almost universally ignored through ignorance of first principles of human vision.

Dark pictures should not be hung against a very light background or the gradations in their shadows will be upset by the light wall.

For room-decorative effect, the more varied the subject as one passes from frame to frame the better the effect. But it is not well to have too many different styles of mounting or framing together, as this produces a mottled, patchy, incoherent effect. The decorative design of a room or wall should have the same general harmonious suggestion that we seek for in a well-conceived single picture.—*R. Dale in The Practical Photographer.*

HOW TO PREVENT P. O. P. PRINTS FROM CURLING

FIRST of all, the extreme dryness of the film may be lessened by immersing the prints after washing, and just before drying, in a glycerine bath — about three drops to the ounce of water. Allow them to remain in this five or ten minutes before drying. Another method is to squeegee the prints to a ferrotype or prepared glass plate, producing a glossy surface, unless ground glass is used. A third method is to lay the prints on blotters, and, when nearly dry, roll them, film side outwards, around a pencil, the edge of each following on beneath the edge of the one before. They should be rolled tightly, wrapped in a paper and left until thoroughly dry, when they may be readily made to lie flat.

MAXIMS ABOUT MOUNTING

THE mount is made for the photograph, not the photograph for the mount.

Composition is of as much importance in the placing of the print on the mount as in the placing of the principal object in the picture. Even the size, design and whereabouts of the artist's signature must be considered in relation to the picture, its position on the mount, its color and its subject. In this connection the signatures of Japanese artists may be studied with profit. Their placing is often a small *tour de force* of composition in itself, and is as truly the result of study as the picture to which it is attached.

The signature must never be so obtrusive as to attract attention before it is looked for; nor so bizarre as to be illegible. Its tint must harmonize with that of the photograph, as well as with that of the mount.

The careful worker will never accept mounts cut to a uniform size. Every mount should be cut for the particular picture it is intended to support. When paper mounts are used the easiest and best plan is to trim them only after the photograph has been affixed.

The novice cannot do better than stick to greens and browns in his mounts. Photography is a monochrome art, and photographers would do wisely to remember the fact when selecting tinted supports for their productions.

Smooth-surfaced prints should not be placed against very rough-surfaced mounts, nor vice versa. The lightness of a print may be accentuated by a very dark mount, and vice versa, but this must not be carried too far, or a jarring note will be struck.

The mount which attracts attention before the print — even by its beauty — is a failure.

Ornamentations on the mount are to be avoided, unless the photographer be a sufficiently skilled artist to design and execute them himself, and in that case he must still bear in mind the fact that the print is the main thing and the ornamentations are subordinate.

Broadly speaking, the only ornamentations a photograph should require are the mount itself and the worker's signature.

While prints may often with advantage be put nearer the top of the mount than the bottom, few, if any, pictures can bear being put nearer the bottom than the top.

The mount should never be very markedly different in shape from the print. Thus a narrow "panel" upright print may not be placed on a quite square or oblong mount.

Avoid incongruities. A print on very stout paper should not be attached to a mount of very flimsy paper. The incongruities of "similarity" are equally bad; thus, a brown print on a brown mount of almost the same shade, so that it is difficult to distinguish where the print ends and its support begins.

Anything in the mount which arouses curiosity is bad, though this is not necessarily a defect in the print.—*Ward Muir in The Practical Photographer.*

NOTES AND NEWS

Announcements and Reports of Club and Association Meetings,
Exhibitions and Conventions are solicited for publication

OUR SPECIAL PICTORIAL INSERT

THE special pictorial insert in color, which begins with the current issue of PHOTO-ERA, will be a regular bi-monthly feature of this magazine. The next subject will be "The Wave," exhibited in the Third American Photographic Salon, by J. R. Peterson, an eminent pictorialist and member of the Portland Camera Club.

A CHANGE IN PHOTOGRAPHIC JOURNALISM

OUR genial and active cotemporary, Mr. F. Dundas Todd, founder, editor and publisher of the *Photo-Beacon*, has at last succumbed to a long-cherished desire to devote his remaining years to agricultural pursuits. He has, therefore, disposed of his periodical and exposure-tables to the publishers of the *American Amateur Photographer* and *Camera and Dark-Room*, agreeing to contribute to the pages of the latter magazine editorial articles each month for a stipulated period. This is well, for the pain of parting is, in a measure, alleviated by our being permitted to enjoy, as of yore, the sparkling dissertations on current photographic events from the pen of our erudite and amiable friend, the only F. Dundas Todd.

WYOMING VALLEY CAMERA CLUB

THE sixth annual exhibition by this society took place at Wilkes Barre, May 8, 9, 10 and 11, and, all in all, must be recorded as an event of exceptional importance. It was planned and carried out on novel and progressive lines, and in this respect it set an example worthy of emulation by other photographic societies. The jury, than which none better could have been selected, consisted of the following-named authorities: Arthur W. Dow, art director, Columbia University; Sir Caspar Purdon Clarke, director of the Metropolitan Museum of Art; Alvin Langdon Coburn, photographer; Edward Penfield, art staff, *Harper's* and William H. Walker, art staff, *Life*. These judges personally inspected all the entries, dividing those which they accepted into four groups, *a, b, c* and *d*, according to the order of merit. From these was chosen the cream and classified as "Special Mention," which comprised the following pictures: Portrait-Class — I. "Portrait," Kenneth Alexander; II. "Baby John," Burton Stanley Ruger; III. "Little Jackie Horner," Misses W. and G. Parrish; Honorable Mention, IV. "Sewing," C. F. Clarke. Figure Class — I. "A Rainy Day," D. H. Brookins; II. Illustration of "Rubaiyat," No. 5, Adelaide Hanscom; III. "From Ship to Dock House," A. W. Engel; Honorable

Mention, IV. Illustration of "Rubaiyat," No. 2, Adelaide Hanscom. Landscape Class — I. "The Crossing, Venice," Wm. H. Phillips; II. "In Turkish Waters," Wm. H. Phillips; III. "The Toiler's Highway," J. G. Ruggles; Honorable Mention, IV. "Study in Snow Textures," Lee Russell. The remaining prints, numbering 279, were by workers of greater or less repute. Here is the list complete, — George Alexander, Chas. K. Archer, Wm. Armbruster, Ethel M. Barrows, W. D. Brodhun, D. C. Brookins, Geo. Buttlar, John Canuteson, Carl W. Christiansen, W. A. Clark, C. F. Clarke, C. P. Cole, Flora M. Colman, C. Edwin Cook, H. R. Cummings, A. M. Curry, Dwight A. Davis, Jane Dudley, W. H. Edwards, Geo. C. Elmberger, A. W. Engel, W. H. Evans, A. L. Fitch, S. H. Gilbert, E. E. Gray, Adelaide Hanscom, O. C. Hillard, J. T. Jennings, A. F. Jobke, F. C. Johnson, Adam Kraft, W. C. Kaiser, R. S. Kaufman, Wm. T. Knox, Geo. J. Lane, B. F. Langland, G. W. Leach, Jr., Robt. L. Litch, Lewis Lloyd, C. N. Loveland, Beatrice Marquis, Harry Maxted, W. A. McAllister, B. J. Morris, Frederick L. Padgett, Misses W. and G. Parrish, H. V. Pettibone, Wm. H. Phillips, H. T. Quin, Jas. L. Radcliffe, Robert Rhone, Burton Stanley Ruger, Lee Russell, J. G. Ruggles, Edward F. Ryman, A. P. Salyer, H. M. Seitzinger, John W. Schuler, Clinton J. Spencer, R. W. Taft, Chas. Tracy, C. O. Thurston, F. M. Tuckerman, R. L. Wadhams, H. F. Walbridge, R. E. Weeks, G. Whitehouse, Paul Wierum, Fanny Williams and Wm. H. Zerbe. The success of this brilliant affair is largely due to the instrumentality and untiring effort of Edward F. Ryman, of the Wilkes Barre Camera Club.

HARTFORD CAMERA CLUB

THE twenty-third annual exhibition of this flourishing society was held May 17-20, the occasion being marked by unusual brilliancy and enthusiasm. Although the display of prints was not so large as that of last year, the pictorial standard was higher and the interest correspondingly greater. The jury, consisting of Clarissa Hovey, of Boston, and C. Louise Williams, of Hartford, made the following awards: Animals — "Going Home," Jenny S. Walkley; Honorable Mention, "An Old Guard," W. H. Thompson. Figure Studies — first prize, "Mistress Harriet," W. H. Thompson. Flowers — first prize, "Iris," Eugene D. Field; second prize, "Pride of the Garden," Henry S. Redfield. Genre — first prize, "Toil Most O'er," Leo Burnham; second prize, "An Artist at Work," Henry S. Redfield. Landscapes —

first prize, "The Base of the Sand Dune," Eugene D. Field; second prize, "The Old Cedar," Herbert O. Warner. Marines—first prize, "In the Fog," Eugene D. Field. Portraits—first prize, "A Portrait," Frederick S. Crossfield; second prize, "A Portrait," Henry S. Redfield. Snow Scenes—first prize, "Winter Contrasts," Eugene D. Field; second prize, "A Winter Afternoon," Clayton P. Chamberlain. The club enjoys a membership of one hundred workers.

DECENNIAL CONVENTION OF THE PHOTOGRAPHERS' ASSOCIATION OF NEW ENGLAND

THE approaching annual reunion of the largest photographic body this side of New York will also be the tenth anniversary of its existence. Its able corps of officials will strive to make the affair one of unprecedented success. To this end it announces the following grand prizes: a solid gold medal to the successful winner in the Grand Portrait Class, prints 8 x 10 or larger, *open to all the world*; three prizes, portrait class; three prizes, genre class, and three prizes, landscape class—confined to association members. The secretary, George H. Hastings, states that there will be a series of lectures, demonstrations and entertainments of an unusually brilliant character, in anticipation of which a full attendance of members from all sections of New England is assured. This festival-convention will take place at Mechanics Building, Boston, August 27, 28 and 29. It is sincerely hoped that amateur workers will appreciate the rare opportunity afforded to compete with professionals for a gold medal.

PHOTO-SECESSION

THE third series of exhibitions held at the Little Galleries of the Photo-Secession will be opened in November, with the Annual Members' Exhibition. Every member is entitled to be represented by one print, at least. Prints should preferably not be framed, but mounted on 14 x 22 mounts. All prints intended for this exhibition should be sent *express prepaid* or *by mail* to: Photo-Secession, 201 Fifth Ave., New York City; or Alfred Stieglitz, care of Geo. F. Of, 3 East 28th St., New York City. Exhibitions of foreign and domestic pictures, not necessarily photographic, will follow.

PHOTOGRAPHERS OF MEN

IT is a singular coincidence that the two American photographers who have engaged public attention to an uncommon degree of late—Pirie MacDonald and Alvin Langdon Coburn—seem to manifest a decided preference for the features of the sterner sex. The former boldly announces himself as a "Photographer of Men," that is his specialty. The latter's collection of notabilities, as seen in New York and Boston, was confined to men. As Mr. Coburn has exercised his talent for portraiture

in London and on the continent, it is a pity that he did not include among his trophies the presentments of such gifted women as Sarah Bernhardt, Cecile Chaminade, Eleonora Duse, Lady Butler and Ellen Terry—subjects surely worthy of his skill. Perhaps the young pictorialist is wise, believing that caution is the better part of valor. Who knows how many times he has not said to himself: "To retouch or not to retouch, that is the question." He has, evidently, decided not to retouch.

Of Mr. MacDonald's exceptional powers to portray human character, PHOTO-ERA will give its readers ample proof in the August issue, in the form of an illustrated article by Sidney Allan on the subject of psychology in portraiture.

THE PHOTOGRAPHERS' ASSOCIATION OF WISCONSIN

THE officers of the Photographers' Association of Wisconsin are to be congratulated upon the success of the eleventh annual convention of that organization, which was held in the Masonic Building, Milwaukee, from April 23 to 25 inclusive. To the officers is due a large share of the success of any convention, and it is, therefore, high praise to state that this last meeting was the banner convention of the Association and that the report of the treasurer shows it to be in excellent financial condition. A fine program was prepared for each day, including demonstrations by H. A. Collings, C. H. Wells, H. E. Smith and L. W. Brown. Addresses of interest and great practical value were also given by W. A. Pryor, A. A. Bish, H. E. Smith, C. W. Neiswanger, W. J. Hillman, Geo. J. Parrott, B. J. Brown and J. M. Bandtel. The exhibition of pictures was of unusual merit, the prizes being as follows:

Class A—first award, D. D. O'Brien, of Waukesha; second award, Rembrandt Studio, Ocanto. Class B—first award, J. H. Field, Berlin; second award, F. R. Poe, Oconomowoc. The Werner Trophy was awarded to B. A. Rice, of Milwaukee, while the Rice Trophy went to H. J. Leonard, of Racine. A collection of six landscapes by J. H. Field was given a blue ribbon and designated as the best exhibit in the Convention. A print, "Cowboy," by B. A. Rice, was selected for the Association Salon, and four pictures, including the one just mentioned, were selected by Messrs. Neiswanger and Parrott to be hung in the Degarre Studio as a loan exhibit, and these are to be in competition for the D. M. I. Diamond Medal. The other three pictures were, "Picking Flowers," by J. H. Field; "Lady Violinist," by H. J. Leonard; and a silhouette picture of a boy playing with a toy engine, by Eb. Harwood.

The next convention will again be held at Milwaukee, and the officers are as follows: president, W. A. Pryor; first vice-president, W. J. Willman; second vice-president, L. P. Clapp; secretary, J. M. Bandtel; treasurer, A. A. Bish.

BOOK REVIEWS

THE ITALIAN LAKES, by W. D. McCrackan. Library 12mo, cloth, illustrated, \$2.00. L. C. Page & Co., Boston.

Among the three hundred thousand American travelers, with whom Europe is now beginning to be alive, there are comparatively few who will not indulge in a visit, however brief, to the Italian Lakes, a region justly regarded as a veritable prodigy of natural loveliness. Whole libraries have been written, picturing the wondrous scenic and climatic charms of this, the garden-spot of Europe. Most of the publications on this enchanting subject are *de luxe* editions, large and gorgeously illustrated; but few even of these convey information in so fluent, succinct and attractive a manner as the admirable volume by W. D. McCrackan, the well-known lecturer and traveler. He has a successful way of acquainting his readers with the matchless beauties of these azure waters, and introducing, opportunely, references to historical personages who have been attracted thither from time immemorial.

A perusal of this story of Lago Maggiore and its sister lakes is an ideal preparation for the tourist, and of absorbing interest, whether he visits the locality for the first or the tenth time. On no account, however, should the traveler neglect to be provided with a camera, it matters not how simple a one, as the wealth of artistic material presented by the Italian Lakes is truly inexhaustible. Mr. McCrackan's book is richly illustrated with photographs of his own taking.

STUDIES IN PICTURES, by John C. Van Dyke. 12mo, cloth, \$1.50. Illustrated. Charles Scribner's Sons, New York.

A new book by so distinguished an authority on art-matters as our own J. C. Van Dyke is always hailed with enthusiasm, and justly so. His latest work, the result of earnest and fearless investigation in the art-centers of Europe, deals with the causes of the present deplorable condition of pictures by some of the old masters, and the author expresses himself with a directness and a vigor that are convincing. His opinion regarding the authenticity of many well-known pictures is equally instructive, and of inestimable value to the art-student. The photographer who cultivates a gloomy, shadowy style in portraiture, in the belief that the old masters recognized only the extremes of chiaroscuro-painting without regard for tonal gradations — will have to think a bit, for Mr. Van Dyke tells him in plain English that they did n't do any such a thing, and gives the reason for the blackened appearance of so many well-known paintings.

The chapters on figure, portrait and genre painting are illuminating in the highest degree. The progressive portrait-photographer, for instance, will read with decided profit a learned art-critic's views on the psychology in portraiture. The illustrations are not chosen perfunctorily, but emphasize brilliantly the strong points made by the author. The volume is a brainy, original

product of one of the highest of living art-authorities and a copy should be owned by every earnest picture-lover — the photographer most of all. As an aid to the intelligent appreciation of great painters and their methods, Mr. Van Dyke's latest book is indispensable.

DIE BILDNIS-PHOTOGRAPHIE (Photo-Portraiture). Second, enlarged edition. Edited by Fritz Loescher. Quarto; profusely illustrated. Gustav Schmidt, Berlin, Germany.

In view of the paucity of successful portraitists among amateur workers in this country, it is a pleasure to announce the publication of a work which we sincerely regard as a positive boon to the earnest and ambitious worker in the most difficult department of photography — portraiture. Recognizing the numerous difficulties the student encounters and the needs of rigorous enlightenment, especially in consideration of the many abominations that are constantly being perpetrated under the guise of "portraits," Mr. Loescher — associate editor of the *Photographische Mittheilungen* and a high photographic authority — treats the matter in a most intelligent, lucid and convincing manner. He probably has heard of the person whose young daughter had been photographed by an amateur. Examining the home-portrait of his only child and then unceremoniously throwing it into the fire, the parent exclaimed angrily: "I consider a thing like that a libel. Instead of reproducing her good traits, that fellow has put in her face what is disagreeable and untrue. Besides, no one would recognize her by that print. If he tries it again, I'll teach him a lesson he'll not soon forget!" As we have stated, time and time again, there exists a lamentable amount of ignorance among amateur workers — we have no concern with the professional portrait-mills — many of whom appear satisfied with their primitive attempts, nor do they seem to know how to progress, even if inclined to. Mr. Loescher devotes a chapter to the conventional portrait, explaining its absurdity and incongruities, and fortifying his statements with copious illustrations. His treatment of the "New Portraiture" is a thorough and masterly exposition of that subject, and enhanced by an immense number of large, well-executed half-tones, illustrating the artistic skill of the world's leading portraitists. Here he shows his breadth of vision by drawing alike from the work of American, English, French and German practitioners. In dealing with the necessary apparatus, Mr. Loescher again displays a broad-minded spirit, by specifying the best types of portrait-lenses with intelligent discrimination and a total absence of bias, worthy, indeed, of all praise. In his chapters on practical portraiture, he demonstrates, with the aid of lucid examples, how every conceivable difficulty in home and *al fresco* portraiture may be overcome successfully. Every worker, be he a student or accomplished prize-winner, should familiarize himself with the contents of Mr. Loescher's work.

DIE KÜNSTLERISCHEN GRUNDSÄTZE UND DEREN ABLEITUNGEN UND ANWENDUNG, by C. Baumann. Quarto. Price, 5 Marks. Wilhelm Knapp, Halle a. S., Germany.

Among the contributions to photographic literature the Germans occupy an honorable place, as attested by the published works of such accomplished investigators as Herrmann Vogel, J. Gaedicke, J. M. Eder, Adolph Miethe and others. But in the æsthetic considerations of the art very little activity has been manifested in that quarter. The reason for this is attributable to the notoriously narrow limits within which German photographers, like their brothers in other civilized countries, labored, ever since the art was derived from the country beyond the Rhine. But even during this long period of conventional portraiture, Germany — together with Austria — enjoyed the distinction of being universally regarded (except, of course, by the ever-prejudiced English photographer) as the leader in beauty and technical perfection of photographic portraiture. This was the era of such distinguished photographers as Angerer, Hanfstaengl, Schaarwaechter, Loescher & Petsch, Luckhardt and Loewy. This company of finely-sensed artists flourished about thirty years ago and, strangely enough, the successors to their famous studios are notoriously deficient in artistic and technical ability. Then followed a period absolutely barren of artistic ideas, until the dawn of the New Photography, several years ago. Recognizing the originality and the distinctiveness of the new school, not a mere *renaissance*, but an awakening to a higher, more truthful mode of expression — far in advance of what the most ardent admirers of the art ever imagined — writers on art stirred in sympathy and began to encourage the artists in an original field with helpful words, expressed after critical considerations of the merits of up-to-date photographic achievements. In his treatise Mr. Baumann, appreciating the endeavors of aspiring pictorialists, cheerfully comes to their assistance, leading the way to a clear and practical understanding of the principles of light, color, harmony, as they manifest themselves in nature. He lifts the veil of mystery that envelops nature's secrets and points out the way to a successful solution of the problems that confront the youthful pictorialist. Recognizing the value of Mr. Baumann's book to the earnest, thoughtful student of nature's pictorial wealth, the Editor of PHOTO-ERA has translated the chapter which treats on the judicious selection of the chief point of interest in a picture, in this instance a landscape, which will appear in the August issue of this magazine.

PHOTOGRAPHY OF BIRDS AND FLOWERS.

This interesting branch of photography is considerably enhanced by means of the handy, illustrated pocket-guides published by Charles K. Reed, Worcester, Mass. Two of these miniature text-books are devoted to birds, shown in color and one to flowers (200 varieties). Price, 50 cents each; in flexible leather, 75 cents, postpaid.

ART PRINCIPLES IN PORTRAIT-PHOTOGRAPHY — COMPOSITION, TREATMENT OF BACKGROUNDS AND THE PROCESSES INVOLVED IN MANIPULATING THE PLATE, by Otto Walter Beck, Instructor in Pictorial Composition, Pratt's Institute. 12mo, illustrated, cloth, \$3.00, net. The Baker & Taylor Co., New York.

At last! We have waited these many years for a book in cordial sympathy with the art-aspirant in photography, and one capable of showing him an easy solution of the perplexing problems that he continuously has to face. Mr. Beck appreciates the fact that, enslaved by commercialism and bonds of custom, plain photography has run into a lifeless groove. A realism has been established that tends to preclude that nourishment and refreshing mental influence found in suggestion and in the creative powers resulting in beauty. Art in photography is possible only in the extension of methods already known and in the employment of new processes to effect a manipulation of the photograph. When the tool is made so pliable that it records more than the surface appearance of things, when the personal element enters to give life to the accurate, literal records, the present limitations of impersonal representation are removed from photography, and its large, true influence opens. In spite of the attainment of much admirable creative work — due to the modifications of lens-records — picture unity and picture expression have rarely been reached. Creative work in photography may be produced by certain other factors; notably, intelligent manipulation on the negative, judicious control of light-and-shade effects and skilful management of the character of lines. Mr. Beck further considers the correct relation of the background to the figure, the theory of spacings, the *bête noire* of the art critic — disfiguring white spots, and the dignified, harmonious arrangement of the figure. In conclusion, the author explains how the character of the negative-film may be changed — improved by mechanical manipulation of brush and knife. Happy, indeed, the worker who shall own a copy of Mr. Beck's practicable volume, assuredly one of the most important contributions to photographic literature.

DEUTSCHER PHOTOGRAPHEN — KALENDER, TASCHENBUCH UND ALMANACH FÜR 1907. K. Schwier, Weimar, Germany. Price, two Marks (50 cents).

A pocket edition of a German annual containing a complete list of photographic societies in the fatherland and Austro-Hungary — professional and amateur — the membership of each being given in detail. There is also a comprehensive list of photo-manufacturers and dealers, arranged alphabetically and according to cities; photo-societies in foreign countries, institutions for photographic instruction and public dark-rooms in Germany and Austro-Hungary, and photographic periodicals throughout the world. The usefulness of this little

volume to the profession in general is apparent. One learns by consulting its pages, for instance, that the city of Berlin has five photographic clubs, with a total active membership of nearly 1,300. What do our photographic centers say to this?

INTERNATIONAL PHOTOGRAPHIC ART AND PICTURE POST- CARD SHOW

ALL of the great departments of craft and commerce, save the photographic arts, have had successful exhibitions, in which their development and progress have been shown. Never in America has a comprehensive and full exhibition of the best processes and products of photography been made. As soon as the management made the first announcement of such an exhibition, it was greeted with high endorsement from the greatest photographic artists in this country and abroad. This desired object will, however, be achieved by the above-named show, to be held at the First Regiment Armory, Chicago, from August 10 to 17.

This date will enable those attending the Convention at Dayton, O., to take advantage of this show, as a special train will be arranged for this purpose. Arrangements will be made as far as possible with the various railroad companies for excursion-rates from all parts of the country.

It is the intention to make this show cover all departments and lines of photography. In addition to the trade exhibitions proper, there will be special sections devoted to each line of photography, professional and amateur.

The management is, from correspondence and promises of support received, fully satisfied that this show will, from the number of applications for space already received, in every way surpass in extent and variety any artistic display yet made. The committees are maturing their plans well in advance, in order that all branches of the craft may be adequately represented, and the Advisory Board is open to receive suggestions likely to add to the attractiveness of the exhibit as a whole.

Intending exhibitors will greatly assist us in making arrangements for this exhibition by informing us as early as possible of their probable requirements, as from present indications space will be limited. The price for space is one dollar per square foot. Arrangements can be made in contracts for the use of booths, already constructed. Write at once for plans, etc.

Gold, Silver, and Bronze Medals, together with Diplomas of Merit, will be awarded in each section and classification. The great Amateur Exhibition, in which is offered \$100 in gold as first prize, \$50 in gold as second prize, and \$25 in gold as third prize, will be a wonderfully interesting display.

The Picture Post-Card Section, in which will be exhibited the collections and samples — both trade and amateur — will constitute one of the greatest displays of picture post-cards ever assembled in one place.

In the Amateur Section, \$100 in gold, \$50 in gold, \$25 in gold, is offered as first, second and third prize for first, second and third best collection of post-cards exhibited.

Mr. Van Deventer, president of the Photographers' Association of America, will occupy the position of chairman of the Advisory Board; Mr. I. W. Taber, the position of vice-chairman; and the list of influential patrons, as well as the Advisory Board of one hundred and fifty members, is one of the most representative ever nominated.

Committee on Commercial Art and Picture Post-Card Exhibits: J. Ellsworth Gross, chairman.

Committee on Portrait Photography and Exhibits: Wm. B. Dyer, chairman; James Arthur, vice-chairman.

Committee on Genre Photographic Art and Exhibits: George E. Tingley, chairman.

Committee on International Photographic Arts and Picture Post-Card Exhibits: A. Langfrer, chairman.

Plans, entry forms, and all particulars may be had of, and all communications are requested to be addressed to, Henry Walter T. Tieman, George Stuart Hill, John De P. Hilton, Organizing Managers. Organization Offices: 3600 Michigan Boulevard, Chicago, U. S. A.

ASSOCIATION OF MANUFACTURERS OF PARIS

ONE of the important photographic bodies of France is the Association of Manufacturers and Dealers of Photographic Materials. We are informed that the officers for the year 1907 are as follows: president, Charles Mendel; vice-president, Mr. Grieshaber; secretary, M. Maugeest; president of the Section of Dealers, M. Dalmais; secretary, Louis Schrambach; corresponding secretary, M. Korsten; treasurer, M. Boespflug; librarian, M. Duplonich; recording secretary, M. Daynes.

CONVENTION OF GERMAN WORKERS

THE German Photographers' Union is to hold its Thirty-sixth Annual Meeting this year, in Bremen, August 26 to 30, in conjunction with the Bremen Union of Professional Photographers and the Bremen Photographic Society. Mayor Marcus will preside. The sittings of the union and the exhibition will be held at the rooms of the "Parkhaus."

The North German Lloyd has extended its well-known hospitality to members, inviting them to visit the works of the Bremerhaven docks and harbor as well as the express-steamer *Kronprinzessin Cecilie*, August 29, and afterwards to go as far as Potesand Lighthouse on board the steamer *Vorwaerts*, at the same time enjoying an entertainment to be offered by the Lloyds.

Persons interested in either the meeting or the exhibition will receive detailed information by applying to the president of the Local Committee, Mr. Willy Dose, photographer, am Wall 117, Bremen, or to the president of the German Photographers' Union, Mr. Karl Schwire, at Weimar.

AMERICAN FEDERATION OF PHOTOGRAPHIC SOCIETIES

FROM the headquarters of the Federation at 1120 Wood St., Wilkesburg, Penn., we have received an announcement and entry blank of the Fourth American Photographic Salon, which will be held at the principal American cities during 1907 and 1908. The announcement appears earlier this year than in the past, and the closing date for entries has been correspondingly advanced. This is necessitated by the fact that new clubs are coming into the Federation and the circuit will be longer than heretofore. From present indications, the Fourth Salon will surpass all others, as nearly one thousand new names have been added to the mailing-list.

For the benefit of PHOTO-ERA readers, who we hope will do their utmost to promote the success of this coming exhibition, we reprint the substance of the announcement, including the list of officers and committees, the conditions of entry and directions for forwarding same:

Officers of Federation — President, R. L. Sleeth, Jr.; first vice-president, William T. Knox; second vice-president, Chas. E. Fairman; secretary, Waldo E. Strayer; treasurer, William H. Phillips; salon director, Louis Fleckenstein; historian, Daniel Baker.

The Preliminary Jury — Photographers, William H. Zerbe, chairman; William T. Knox, Frank G. Wood, Dwight A. Davis, William H. Phillips, John Chislett, H. W. Minns, Winfield Scott Cline, R. E. Weeks, D. H. Brookins, R. L. Wadhams, R. L. Sleeth, Jr.

The Final Jury — Painters, not yet chosen.

Salon Committee — Louis Fleckenstein, director; Waldo E. Strayer, William H. Phillips, C. F. Potter, Jr., F. Dundas Todd, S. C. Bullen-camp, William H. Zerbe, E. G. Fountain, George W. Beatty, C. C. Taylor, H. M. Seitzinger, A. Doerflinger, Fayette J. Clute, R. E. Weeks, John Chislett, J. H. Field, R. L. Sleeth, Jr.

Foreign Relations Committee — Louis Fleckenstein, chairman, Faribault, Minn.; Carl Rau, Louis A. Lamb, Mrs. E. W. Willard, Fedora E. D. Brown, Mrs. Sara W. Holm, Mrs. W. W. Pearce, William H. Zerbe, Wendell G. Corthell.

Membership Committee — Waldo E. Strayer, chairman; F. M. Tuckerman, C. F. Potter, Jr., John Chislett, C. C. Taylor, H. M. Seitzinger, George B. Goodwin.

Printing and Publicity — Waldo E. Strayer, chairman; William H. Phillips, R. L. Sleeth, Jr.

FORWARDING ENTRIES.

Entries may be forwarded to any of the following addresses: Fayette J. Clute, care Camera Craft, San Francisco, Cal.; Louis Fleckenstein, Faribault, Minn.; George B. Goodwin, Wisconsin Camera Club, Milwaukee, Wis.; R. E. Weeks, Chicago Camera Club, Chicago, Ill.; C. C. Taylor, Toledo Camera Club, Toledo, O.; E. G. Fountain, 203 Chamber of Commerce, Cleveland, O.; William H. Zerbe, 345 Spruce St., Richmond Hill, L. I.,

N. Y., or direct to The Pen, Pencil and Camera Club, 1120 Wood St., Wilkesburg, Penn.

American entries MUST BE framed or glazed. Failure to comply with this condition will prevent pictures from being submitted to the juries.

FOREIGN ENTRIES.

To be sent mounted or unmounted, but NOT framed.

Entries from Great Britain should be sent to arrive by Aug. 15, 1907, to H. Snowden Ward, 6 Farrington Ave., London, E. C., England, and should be marked "For American Photographic Salon."

Entries from Italy, to Alfredo Ornano, 21 Via Caffaro, Genoa, Italy, to arrive in his hands by Aug. 15, 1907, and should be marked "For American Photographic Salon."

Entries from Norway, Sweden and Denmark, to Copenhagen (Denmark) Camera Club, before Aug. 15, 1907, and should be marked "For American Photographic Salon."

Entries from Australia to A. Hill Griffiths, 66 King St., Sydney, N. S. W., to arrive in his hands by Aug. 1, 1907, and should be marked "For American Photographic Salon."

Entries from all other countries should be sent direct to The Pen, Pencil and Camera Club, 1120 Wood St., Wilkesburg, Penn., U. S. A., marked "For American Photographic Salon, in bond to Pittsburg," and should arrive in Pittsburg Custom House by Sept. 1, 1907.

Accepted foreign entries will be framed at the expense of the Federation.

CONDITIONS.

1. Entries must be in the hands of the Pen, Pencil and Camera Club, 1120 Wood St., Wilkesburg, Penn., U. S. A., by noon of Sept. 15, 1907.

2. There will be no invited work. All prints will be submitted to the preliminary jury.

3. No work entered for former American Salons will be eligible.

4. Entries must be suitably framed or glazed, and the title, WITH NAME AND ADDRESS OF ENTRANT, plainly written on back of each — except in case of foreign contributors.

5. A list of titles must be sent separately by mail, giving name and address of sender, price of each if for sale, and special instructions, if any. This list should be in the hands of the secretary a few days before the closing of entries.

6. All work, mounting and framing excepted, must be done by entrant. Sign names of collaborators.

7. Pictures will be returned as soon as practicable after the close of the exhibition.

8. Each contributor must pay the expense of transportation to and from the exhibition.

9. A commission of fifteen per cent will be charged upon each sale by the various clubs holding the Salon.

PHOTO - ERA

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AUGUST, 1907

No. 2

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PHIL M. RILEY, Associate Editor

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PIRIE MACDONALD
GENERAL ADNA R. CHAFFEE



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Psychology in Portraiture

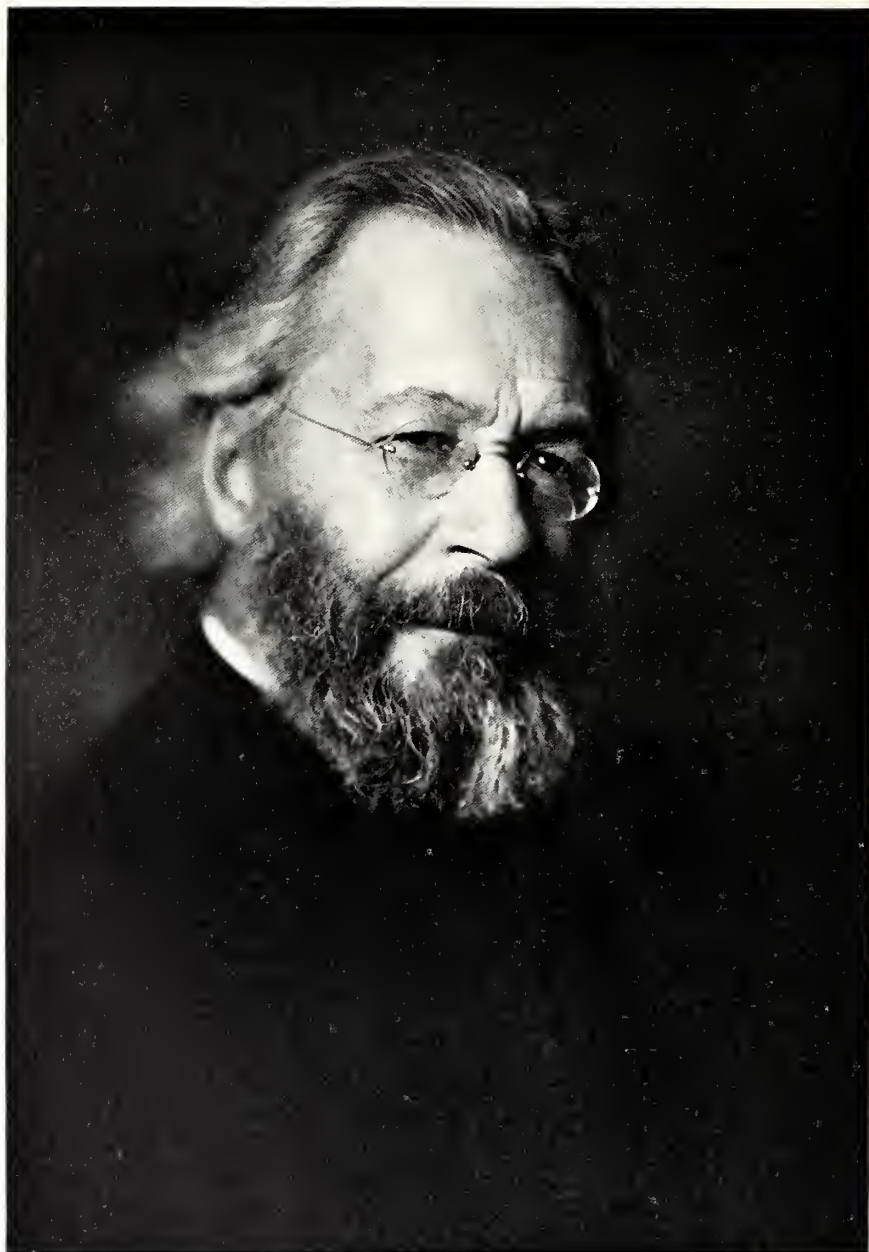
SIDNEY ALLAN

PORTRAITURE, as it is practised to-day, even when at its very best, is nothing but an æsthetic enjoyment for the few who like to see a personality delineated as another personality sees it. The pride and surprise of performance has become the predominant quality, and the note of psychology—the record of the inner life of man in contrast to outward appearance — is lacking.

The painter is too much absorbed in the individuality of brush-work, in the color-scheme and composition, in the effect, perchance, of some passing light, to give due attention to the delineation of character. Of course there are exceptions like Watts, Lenbach and Bastien LePage, who, all three in their own way, undertook to blend character with artistic qualities. But the technique of the painter is inseparable from the conception of his mind, and the stronger his personality is, the more active will his imagination be in the presence of an interesting sitter. He unconsciously will give his own interpretation to the features and forms before him, and the result will be a commentary on them rather than an accurate representation of the same.

Their medium of expression is a too elaborate one, the action of the hand too closely connected with activity of the brain that it could grasp objective phenomena; and the likeness they render is not likeness *per se*, but likeness as seen through a temperament. Many of the leading portrait-painters have realized this deficiency and tried to substitute it by a mechanical registration of facts. They have welcomed the camera as an obliging assistant to overcome the difficulties of actual structure.

Photography is the one medium of pictorial expression which records independently, only the selection of its subjects is under control, but what it is asked to represent it represents mechanically. And it is one of those inexplicable cases of human shortsightedness that the artists of the camera have not recognized the fact that the originality of camera expression is dependent, no, stands or falls, with this one quality of independent registration. Instead of blindly imitating the formula of other arts, they should have recognized that their technical means were capable of a new style of expression.



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PIRIE MACDONALD
REV. CHARLES H. PARKHURST





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PIRIE MACDONALD
JACOB RIIS



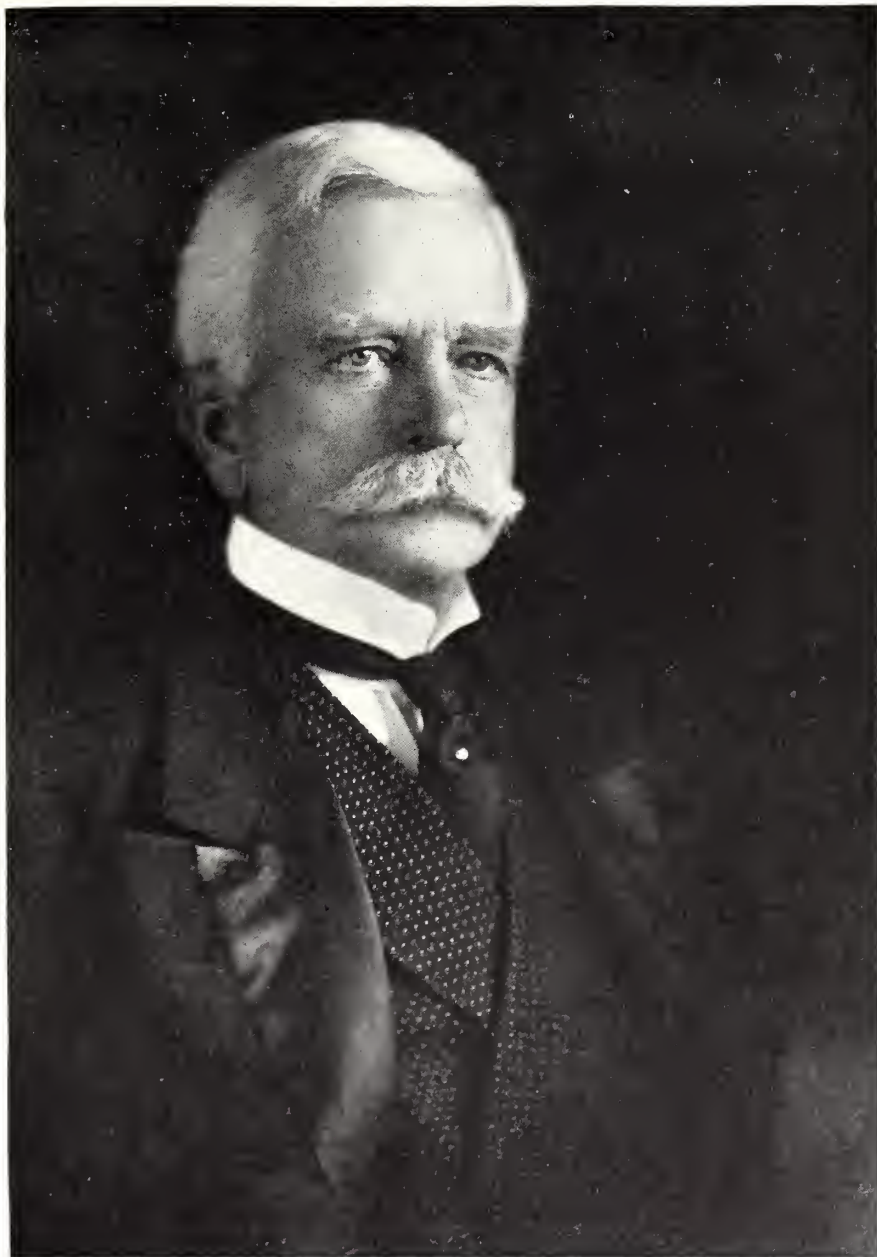
For who can say what a portrait-painter might not accomplish, if he could devote his entire knowledge and all those qualities which constitute genius in a painter to the arrangement, investigation and full comprehension of his subject, leaving the labor of actual representation to a mechanical process of reproduction.

"But a photograph is so matter-of-fact, so bald in appearance!" will be the argument. True, it is matter-of-fact, and this is the sole reason why so many photographers lose themselves in imitative eclecticism, in the endeavor to substitute what their process is lacking. I am not so certain, however, about the baldness of effect. The technique of photography is becoming more fluent and flexible every day, and, barring color, it has a peculiar solidity of dark tints, a richness of tonal gradations, and a faculty to lose form in its background and environment, which compares favorably with other graphic arts. If one approves an etched portrait one has no ground to find fault with a photographic portrait.

The great difficulty at present is that so few men enter the profession who have the necessary faculty for its proper and successful manipulation. Not every man is an appreciator of character and facial expression and at the same time endowed with good taste, pictorial insight and that peculiar patience which the scientific practice of photography demands. Pirie MacDonald is such an exception. He is a man of great intellectual resources, naturally endowed with good taste and a peculiar gift for his profession. He underwent a thorough academic training in order to become more conversant with the technical methods of art and the laws of composition. Few have carried the photographic art to such a pitch as MacDonald. He was a masterly technician from the start. From the time of his first successes at photographic expositions he was hailed, I believe, as a recruit of high value to the camp of artistic photography. He was already in possession of a style. Slowly his style gained in delicacy and assurance, in the faculty to render character in a straightforward, sympathetic manner. Then he became a master of light and shade, and added the poetry of atmosphere to his character delineation. Finally, he carried his style to the highest point by expressing those subtle emotions which might be called the psychological element in art.

His portraits, glanced over *en masse*, have all a certain virility and robustness in common; although at first glance there is a deceptive smoothness, resulting from a perfect technique, about them. His subjects are, of course, such as thousands might have to interpret; but how they reflect each human expression! He gives the exact translation of his thought about a person, without changing the actual resemblance. With him photography has become pure tact of vision.

Two of Pirie MacDonald's recent portraits, which it must have been a delight to interpret — I allude to those of General Chaffee and Russell Sage — show his conception of character. It is evident in the massive and erect head of the one and the arrangement of light which forms the setting of the slim, long face of the other. He enables us to see in the shrewd, wrinkled countenance of Russell Sage all the power of concentrated thought and patient labor that is valuable in the man; and in the face of General Chaffee, he suggests squareness of form, indicative of firmness and manly vigor, by features and form that are perfectly round.



Copyright, 1903, by Pirie MacDonald, New York

PIRIE MACDONALD
MARSHALL FIELD



Another brilliant production is the portrait of Rev. Parkhurst. The well-known preacher and reformer is quite a picturesque character, and the photographer expressed it by a more pictorial arrangement. It is shown in the energetic twist of the head and in the usually strong contrasts between the light and shadow parts. His keen and thoughtful and his absorbed and concentrated gaze gains a deeper significance by this treatment. MacDonald's power of interpretation is also much in evidence in his portrait of Jacob Riis. The sympathetic nature of Roosevelt's "best citizen," his faculty for observation, and his frankness in expressing it are apparent in the simple and genial facial expression. And with what breadth of sympathy and keenness of insight has the photographer depicted the face of Marshall Field, a man of calculation, restless energy and rare organizing-power. The first impression MacDonald received when Mr. Field entered his studio was that of an officer who, with perfect ease of manner, is used to command large masses of people. "Why, he is the merchant-militant," suggested itself to the photographer's mind, and out of this idea he created the portrait which carries out the most familiar phase in Mr. Field's outward appearance.

MacDonald's activity has been confined almost exclusively to portraiture, and, as he was attracted most by character, he has devoted himself in recent years exclusively to the portrayal of men. Laying particular stress upon the beauty of features and those parts of the face that express intellectuality and rare mental gifts, he concentrates all his light upon the eyes and forehead, while the failings and weaknesses of humanity are absorbed in the shadows. For the same reason he seldom attempts standing figures, but prefers the simplicity and directness of the bust portrait without any embellishments and accessories. MacDonald simplifies, but simplifies with taste and unerring precision. What big, sweeping masses of light and shade, and what a shimmer of light upon the faces! He is not imitating the chiaroscuro scheme of any painter or school, but has invented his own method.

My admiration for this distinguished work is such, that I am perhaps in danger of overstating its merits; but it is worth taking into account that to-day, after several years of acquaintance with it, its merits seem more and more to justify enthusiasm. His photographs have the sign of portraits of the first order, and their style alone — I can't call it otherwise — would save them if everything else should change: our measure of the value of resemblance, their expression of character, and the particular association they evoke.

The gift that he possesses he possesses completely — the immediate perception of the final result and the means he can employ. Putting aside the question of the subject (and to a great portrait a common sitter will doubtless not always conduce), the highest result is achieved when to the element of quick perception a certain faculty of lingering reflection is added. I use this term for lack of a better; I mean the quality which enables the artist to see deep into a subject, to absorb it, to discover in it new things that are not on the surface of expression, and to become patient and almost reverent with it — thus elevating and humanizing the pictorial problem.

A Model Photographic Plant

C. H. CLAUDY

THE photographic laboratory illustrated herewith, and of which the description follows, is not presented as a model for those who wish to construct photographic workrooms; that is, it is not so intended in the concrete; in the abstract, the order, method and arrangement followed in this unique establishment, if copied in the smaller edition which we all either own or hope to own, cannot fail to be of benefit.

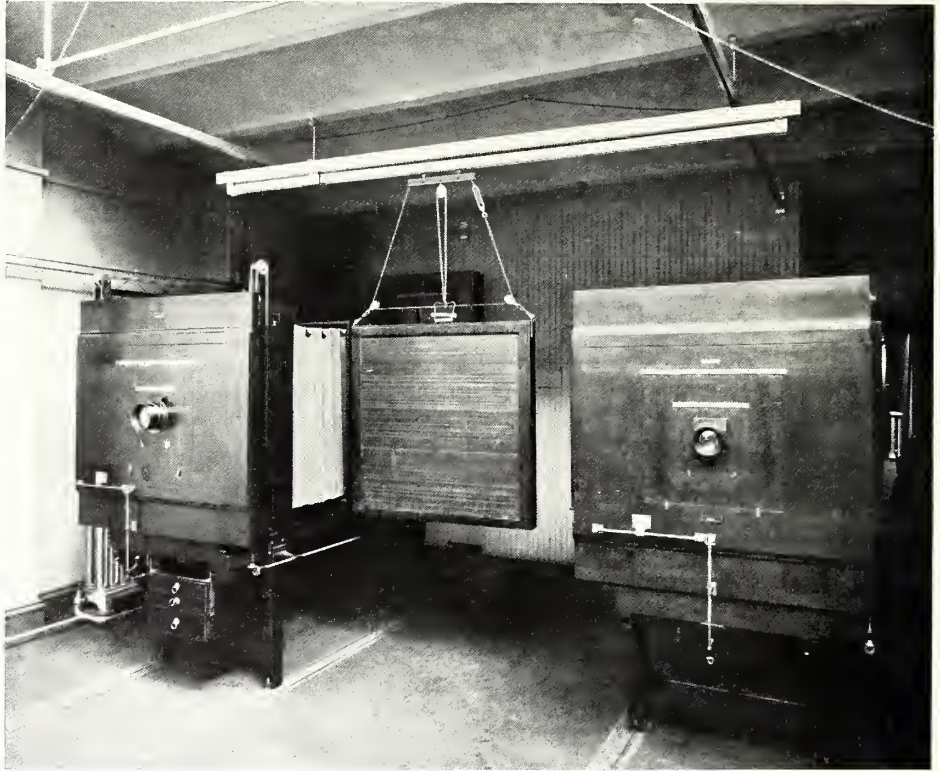
The laboratory in question is the one belonging to the United States Geological Survey, where photographic work of all descriptions is carried on with the minimum effort and the maximum output — the smallest expense and waste and the greatest possible per cent of perfect results.

The establishment is not perfect. More room, and a better arrangement, would decidedly improve its facilities, but, with the space at command, the maximum convenience has been attained.

A very important part of the work is copying. Maps, particularly, must frequently be reproduced by photographic means, necessitating a plant of absolute accuracy and large capacity. For this work, two cameras are provided of monster dimensions, taking a plate 28 x 34 inches in size. These cameras are mounted on tracks so as to slide back and forth, and, of course, are instantly lockable in any position. Naturally, to focus such a camera, some other means than the usual must be provided. No workman has arms long enough to reach out from the back to raise or lower the front, or shift the lens from side to side. So these movements are controlled by gearing, through shafts which reach back of the camera within easy handling-distance of the workman under the cloth.

The copying-boards, rigid, perfectly plane and parallel to the camera-fronts, are illuminated by electric lights, no dependence being placed upon variable daylight for work which must always be of the same standard and which may be needed in the greatest kind of a hurry. The lamps — four to a copying-board — can be placed in any required position, being balanced on cords for up-and-down motion, mounted on trolleys overhead for forward-and-back movement and the light being controlled and projected by parabolic reflectors.

The trolley system has been extended to the plate-holders. These heavy and large affairs are entirely too cumbersome for a single workman to handle alone in the ordinary way; so when they are to be moved from dark-room to camera they are suspended from a trolley at the right height, and pushed across the short intervening distance. The plate-holders never enter the dark-room. They fit up close to and completely fill a window in the dark-room, making a light-tight joint. Everything being ready for the exposure, the plate (wet) is prepared in the dark-room, slipped into the plate-holder and the slide dropped. If it is desired to maintain darkness in the dark-room, a slide is drawn across the window. A catch is released, the trolley swings the holder away from the window and over



C. H. CLAUDY

MONSTER CAMERAS SLIDING ON TRACKS

Note plate-holder on trolley, and gearing to lens-board, permitting of adjustments from the rear

to the camera, where it falls instantly and naturally into place and the exposure is made. The idea of loading these huge plate-holders by means of a trolley and a window saves a great deal of time, extends the efficiency and the working-time of the individual operator and gives him more and better opportunity for doing his best work.

Of course, all the copying-work is not so large. Twelve Cooke lenses, ranging from twenty millimeters to thirty-one inches in focal length, are available for this work, and each, with the exception of those very small ones used in microscopic work only, mounted on its own lens board, will fit any camera in the establishment. No vibration ever interferes with the work of copying, the camera track-beds being of cement, resting on the iron foundation of the building. Beyond this copying-room are some smaller dark-rooms for Velox printing. Here the new tantalum incandescent lights are now used in place of the ordinary carbon filament lamps. These lamps, of twenty-four C. P., are effective, as compared with carbon filament lamps of thirty-two C. P., in the ratio of nine to fifteen, considerably more than twice as bright, photographically speaking. They also light and go out almost instantly, allow of the speediest possible printing of

negatives on gaslight paper consistent with control, have none of the heat and other disadvantages of arc-lights and are generally the most satisfactory illuminating-apparatus possible for this work.

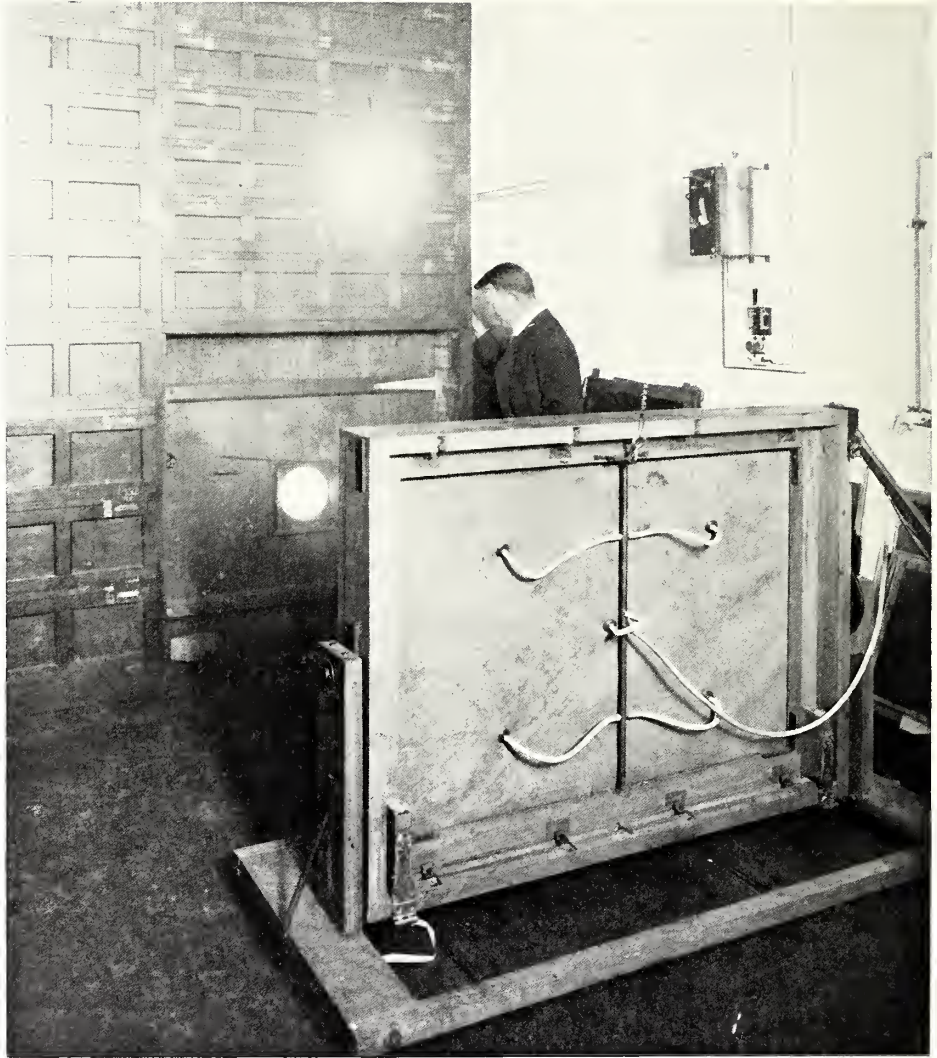
Turning in the other direction, a series of workrooms, headed by the wet-plate dark-room, follows. First is the dark-room, where the coating of the plate is accomplished, and later, the development. Next comes an intensifying-room, then a washing-room, drying-room and lastly a glass-cleaning room, all in a line and so arranged that the plate constantly progresses and does not retrace its steps.

Further down is the printing-room for large work. This is a revelation to the photographer whose wildest dreams have never seen a larger print made than 18 x 22. Here the immense glass plates are printed from, and also the equally large paper negatives, which articles are not infrequently made of maps where the negative is to be preserved, paper negatives serving as well for most work as glass, and having no risk of breakage and small storage-space demands, both considerations worthy of note.

As may be imagined, the problem of getting a sheet of paper to lie in absolute contact with a sheet of glass, or a paper negative resting on glass, 28 x 34 inches, is one not to be solved with the familiar bowed brass springs of the ordinary printing-frame. The printing-frame here used is a pneumatic one — an air-pump exhausting the air between the back of the plate-holder and the paper and negative beneath, which permits of a pressure up to fifteen pounds to the square inch of surface being applied, thus holding the two together in absolute contact during the exposure. Bromide and chloride papers of all kinds are used, including a special paper made for the purpose, which, like a slow plate, gives the greatest possible contrast for line-work and no half-tone. This is what is desired in printing line copies of maps and sketches, which forms a good part of the work done by this laboratory. The exposure is made by opening and closing a shutter which allows a powerful electric light to shine upon the face of the frame for an average time of one-half second. The frame itself is hung in gimbals and can be turned face up for examination, or face down for the work of putting in and taking out the paper and negative or swung perpendicular for the exposure.

Paper is kept in special cases, the closed doors of which are shown in the photograph on the next page. Instant access to any one can be had at all times, without disturbing others, and all are light-tight and damp-proof.

Developing and fixing are done in huge trays, the fixing-tray having a pocket in one end so that the tray may be swung up, on hinges, until it is upright and out of the way, all of the solution being caught and held in the pocket at the lower end. The drying of these enormous prints after a washing in a huge sink by means of a rubber hose and constantly attending to them by hand is accomplished in the cloth shelving shown in the illustration. These drying-racks are made of cloth, wound on a spring roller. When not in use, they are released and roll up against the wall. When wanted, the end is pulled forward and the stick, which passes through the end of the cloth, is hooked between two posts, where it holds



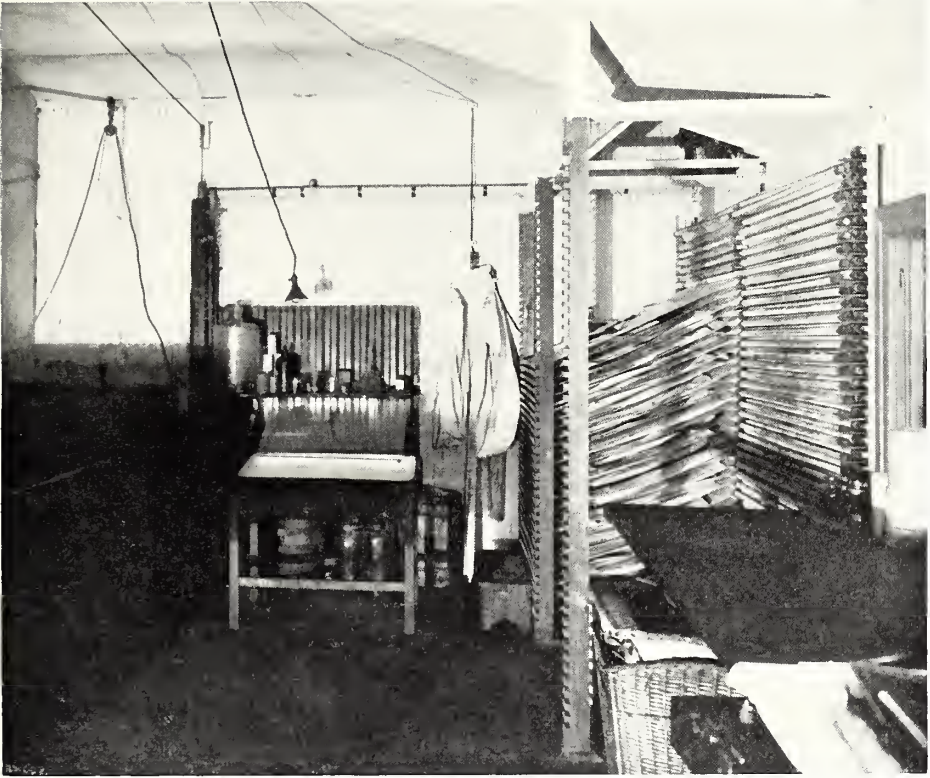
C. H. CLAUDY

A PNEUMATIC PRINTING-FRAME

The round hole is the source of light and the wooden closets contain printing-paper

the cloth in the form of a slanting shelf of cloth on which the big prints are dried by a constant circulation of air from an electric fan.

Electric fans are all about, too, and so arranged that they do not merely agitate the air in the various rooms, but provide, by means of floor and ceiling openings, the constant ventilation which is essential for comfortable working in any laboratory where chemicals which give off fumes are used, as in the case of wet-plate work.



C. H. CLAUDY

WHERE THE BIG PRINTS ARE MADE

Note cloth drying-racks

There is an enlarging-room which would delight the heart of any one who has ever tried to make enlargements with makeshift apparatus. Here is a Cooper-Hewitt lamp for illumination, and a specially constructed enlarging-camera. The easel is enormous and will accommodate the largest sheet of enlarging-paper made. It can be turned to any angle, moved backward and forward, tilted sidewise and back and forth. The lens in the camera can be focused by means of a shaft from any position along the bed, so that the operator can get close to the screen and examine the image and do fine focusing with his eye close to the work. This apparatus is in a room especially provided for it, and for nothing else.

The parties of the survey in the field take thousands of photographs. These are all finished here. Mounting, for those that require it, is accomplished by means of the dry mounting-tissue, and one of the cleverest little schemes imaginable makes the work more than simple. A large letterpress was provided with a flat electric heater on the under side of the movable part of the press. The print, trimmed with the tissue under it, is placed in position on the mount and "tacked" down with a momentary pressure of a hand electric-heating iron. The

whole is then put between blotters in the press, the press screwed home, left a second, unscrewed and behold, the mounting is accomplished.

As may be imagined, the storing of the enormous quantity of negatives which are the property of this laboratory is a problem, and particularly in making any negative instantly accessible. To this end there is in course of making at the present time a set of reference-books, which have the photographs arranged by subjects. A card index will cross by means of locality. Another set of books has all the work of individual field workers, and a second index will have a cross on the first two by means of dates. With dates, men, localities and subjects, any individual photograph can be found at a moment's notice, and the number attached will make the negative available on the next instant.

There are other and smaller laboratories attached to and part of what has been described. There is a private chemical laboratory where the director of the whole can carry out individual work, tests, etc. There are a number of admirably arranged dark-rooms for various purposes — all, it may be said, the most convenient, both as to arrangement and ventilation, which can be conceived. There is a department where nothing but photographs of fossils are made, and another where rock sections are photomicrographed. Such subjects can only be touched upon lightly and indicated, in a story of this length and scope.

It should interest many to know that almost without exception the apparatus has been made by Folmer and Schwing after designs of Mr. N. W. Carkhuff, formerly head of this laboratory and now a valued chemist with the Eastman Kodak Co. Mr. Carkhuff indicated what he wanted and gave his ideas, Mr. Folmer enlarged and changed them, and together they worked out the present system of cameras and apparatus which work to such great efficiency and with the minimum of effort and time expended.

It is interesting to note that no separate appropriation is made for the maintenance of this, the finest and best-equipped photographic laboratory of the government, if not in the United States. The various departments of the Survey pay each their *pro rata* share from strict accounts kept of the work which is charged against them. Thirteen men are constantly at work here, which should be some indication of the amount of work done; for thirteen men, with all possible conveniences, can do a great deal of work in a day — multiplied by three hundred and sixty-five, the output in photographs reaches a staggering total.

No work but the best is allowed or considered, it being rightly thought that it is much cheaper to "waste" paper and plates, and get a thing right, than send it out wrong for an artist to do over. Not that there is very much "wasting" of any kind going on, the entire force being highly skilled in photography in general and the work they each have to do in particular.

Visitors with a reason for their visit would probably be welcomed; the general public is strictly excluded; indeed, the general public, and even the photographic public, are hardly aware there is such an institution in existence. It is hoped that after the publication of this article that last phrase can no longer be truthfully written.



MRS. W. W. PEARCE
RUNNING AWAY FROM MOTHER





NICOLA PERCHEID

THE PHOTOGRAPHER'S PETS

A Catechism on Focal Lengths

G. M. ALVES

(Concluded)

Question.— It has been explained in previous answers that the perspective or drawing of a photograph does not depend upon the focus of the lens used, but simply upon the point of view; i.e., upon whether the perspective distance has been well chosen: that with any focus this perspective distance should be the same, and that then the images will vary in size just as the focus used, and in nothing else, excepting as to a depth of focus. Now, what about the scale of the images? Ought there not to be some natural scale? And does not the focal length used determine this?

Answer.— Correctly speaking, the focal length (more exactly, the conjugate focal length) used in the making of the photograph should be that distance at which the photograph is viewed. This will be obvious when we refer to the instance of holding the pane of glass to any scene, where the images as etched upon the glass were of the same size as those in a photograph where the focus used was that of the distance of the eye from the pane of glass. Consequently, to be quite natural, if we are to view a photograph at a normal distance of fourteen inches, then it should be made with a fourteen-inch lens. But while all this is true, yet the mind or the eye readily adapts and accepts any other reasonable scale. If this was not so, the large majority of pictures, whether photographs or hand work, would suffer condemnation. If we keep within the limits of from six to twenty-four inches focal length for photographs to be viewed in the hand, we shall be safe. Smaller than the six inches will give pictures an appearance of receding, and longer than the twenty-four will give an appearance of advancing of the objects in the photograph when viewed at the normal distance.

Ques.— In a former reply it was said that the focus of lenses affected the depth of focus in a photograph. Now, in the first place, what is depth of focus?

Ans.— When a camera is extended to the focal length of its lens, each point of a distant scene sends its rays of reflected light to the whole of the exposed portion of the lens, and this bundle of reflections is coned; i.e., focused to a corresponding point on the screen or sensitive plate. Now, near-by objects, the



G. CASTRUCCIO

GOSSIP

THIRD AMERICAN PHOTOGRAPHIC SALON

conjugate foci of which are appreciably greater than the focus of the lens, would be coned to a point beyond the screen or plate, and, as a consequence, are intercepted by the plate or screen in a "circle of confusion." So, too, if the lens is focused upon the near-by objects, the cones of the distant objects are focused to points before they reach the plate or screen, and then continue in reversed cones which are intercepted by the plate also in "circles of confusion." Of course, strictly speaking, there is no such thing as a focal depth to any lens, but it is agreed that when the "circles of confusion" do not exceed one one-hundredth of an inch in diameter, then they will not be noticed by the eye, and within these limits, fore and aft, is the depth of focus of the lens.

Ques.— In what way, or by what rule, does the focus of a lens affect the focal depth of a photograph?

Ans.— The shorter the focus, the greater the focal depth. Aside from a slight negligible quantity, the rule is, the focal depth varies inversely as the square of the focus. Compare a 6-inch focus with a 12-inch: 6×6 gives 36; and 12×12 gives 144. Consequently, as 36 will go into 144 just four times, the 6-inch focus will have just four times the depth of focus as will the 12-inch. Compare a 7-inch focus with an 8-inch: 7×7 gives 49; and 8×8 gives 64. Consequently, the 7-inch has about thirty per cent more focal depth than the 8-inch. And so on, for any other focal lengths. Although not in the question, it will be



WM. S. RICE

BACCHUS

well to explain that there is another element which determines the focal depth, and that is the diameter of the stop or aperture used. The rule is, the depth of focus varies inversely as the diameter — not the area; so that a lens working at $F/8$ (U. S. No. 4) will have just one-half the focal depth as when it is put to work at $F/16$ (U. S. No. 16). It may also be added that these two elements, focal length and diameter of aperture, are the only things which affect depth of focus; and those who specially advertise the great depth of focus of their lenses are really not ingenuous, but are playing upon the credulity of the ignorant. Nothing short of an abrogation of a natural law will prevent two makes of lenses of the same focus and aperture from having precisely the same focal depth.

Ques.— Are there any rules by which one may know the nearest distance beyond which all will be in depth of focus, for any particular lens?

Ans.— Yes, quite precise ones; but the following will be quite near enough, and may be easily carried in the head: square the focus of the lens in inches,

and the result will be the distance in feet beyond which all will be in depth of focus when stop F/8 (U. S. No. 4) is used. Example: what is the nearest distance beyond which all is in focus in using a 7-inch lens with stop F/8? 7×7 gives 49 as the distance in feet. With an 8-inch lens, 8×8 gives 64 as the distance in feet. If we use a stop of smaller diameter, then the distance will be less. Thus, in the last case, if we use stop F/16, the distance will be one-half, or 32 feet. The novice must here be cautioned against thinking depth of focus is always a good thing. Sometimes it is, and sometimes it is not. But when, and in what particulars, would lead to long digressions.

Ques.— As a general proposition, what is the best focal length in reference to the plate used?

Ans.— This is somewhat a matter of individual opinion. The present respondent thinks, taking it up one side and down the other, that a focal length equal to about the diagonal of the plate will subserve the most uses. Many, especially those who affect the artistic, demand a longer focus; but the length given above will give an angle of view in a scene which will best meet popular demands. If for special work a longer focus is called for, the back member of any excellent symmetrical lens (and why work with any other?) will give about double the focus.



NINO FERRARI

PONTE VITTORIO EMANUELE, TURIN

THIRD AMERICAN PHOTOGRAPHIC SALON



H. MISHKIN
A GIBSON BEAUTY



The Graflex Camera in Porto Rico

AUSTIN K. HANKS

PUERTO-RICO, the Spanish name of the delightful isle of Porto Rico, means "Rich Port." There are truly no two words which would better describe that delightful tropic island. For beauty of country, interesting and fascinating street-scenes, quaint bits, old ruins, cathedrals, markets, etc. (some of them from two to four hundred years old), Porto Rico is truly a Mecca for the camerist.

It was my good fortune to spend a period of five weeks in Porto Rico during the most delightful season of the year. The season is from about the middle of December till the latter part of March. During the February that I was there I made nearly three hundred and fifty exposures, making sixteen dozen exposures on roll film and twelve dozen on 4x5 plates with the Graflex Camera, the balance being made with a 5 x 7 tripod (Graphic) camera. Of the total amount of exposures made I lost but twenty. None of the developing of either plates or films was done until after my return to New York, with the exception of three rolls of film which were developed with a developing-machine at the very beginning of the trip, and this was done merely to see how the exposures were running. My original intention in taking the machine was that I would probably be able to develop all of the films at intervals during the trip. This idea I immediately discarded as being decidedly far from practical, the greatest handicap being lack of water. On the steamer fresh water is nearly as scarce as hen's teeth, and on land the water is both hot and dirty. All of the fresh water is rain-water, caught on and piped from the tin and stone roofs of the various buildings and retained in open tanks. Most that I tried, as before said, was dirty, and generally had a temperature of nearly, or over, 80 degrees.

However, as I have titled this article "The Graflex Camera in Porto Rico," I will proceed immediately to "get down to biz " as doubtless some practical points regarding the use of a Graflex in the tropics, various exposures to be given, and method of development will be of value to a large number of my readers.

My outfit is the 4 x 5 reversible-back Graflex of the good old "first-model" type, with the original model shutter, which can be regulated at will from any variation of exposure from $\frac{1}{8}$ to $\frac{1}{1250}$ of a second. This model shutter is decidedly my favorite, and I much prefer it to even the latest continuous curtain affair which gives you only about a half-dozen different apertures as against fifty or more variations of the good "old-fashioned" type. It is all nonsense to say that it is "complicated" and "easily gotten out of order." All that is needed is a little caution and some common sense. The writer's Graflex has been in constant use for several years, and with it hundreds of exposures have been made, and it has not seen the repair-shop yet. The lens which I use almost exclusively in this camera is the 8-inch focus Cooke of the F 4.5 series. A lens working



AUSTIN K. HANKS
MARKET SCENE IN SAN JUAN
SAN FRANCISCO STREET, SAN JUAN



at F 4.5 is a decided advantage to have for use in a Graflex. The accompanying market-scene was made *before* 7.30 A.M. and at an exposure of $\frac{1}{125}$ of a second with the open lens. A pointer in taking market-scenes, I think, will prove interesting. The Spanish, especially "the kids," are about as "nosey" a set of folk as I have ever seen, particularly when the attraction is an "Americano" and he is endeavoring to make pictures. When you really see something in a market *you want*, just size it all up, get your shutter ready, slide drawn, etc., and then pick out some object at a direct right angle, or a still greater *opposite* direction, to the subject you really want, but which you think is very nearly the same distance from your camera as the subject which you really wish. This gives you your focal point. Then deliberately continue to point your Graflex in this opposite direction, and in a few moments you will have a semicircle of interrogation-points in the form of humanity directly in front of you, and some of them not more than six inches from the lens, but—these few moments give you exactly what you wish; it gives a clear sweep from yourself to the subject you do wish, and—when the critical moment arrives—turn yourself quickly around and a press of the thumb secures results quite similar to the San Juan market-scene herewith reproduced. A very little study will show how fine and clear the foreground view is, and also that not a single person in the picture was conscious of the exposure being made. In taking street-scenes, where the streets were somewhat crowded, I found a similar method of work very advantageous. In all cases, be sure to have the mirror set, focal plane shutter wound and set, an unexposed plate ready and in place, decidedly previous to the making of, or even wishing to make, an exposure; in fact, I generally make a habit of doing all of the above directly after the making of an exposure; then I am always ready, without further thought. I use the lens at F 4.5 (wide open), F 5.6 and F 8, and vary the exposure from $\frac{1}{125}$ to $\frac{1}{300}$ of a second. When the light is not very intense, I found F 5.6 and F 4.5 with $\frac{1}{125}$ or $\frac{1}{150}$ second an excellent exposure. When the light was quite intense, and the shadows not too dense, I use F 8 with $\frac{1}{125}$ second. I find these two exposures sufficient for all subjects moving at an average pace, such as people, walking horses, etc., and $\frac{1}{125}$ at F 8 (where the light will allow it) is infinitely superior to $\frac{1}{300}$ at full opening, as the smaller stop, of course, gives an increased depth of field which is a decided gain. However, in the tropics don't let the intensity of the light fool you; time, in all cases where possible, for the shadows. I once tried $\frac{1}{125}$ second out in the open, as an experiment, where I thought the light unusually bright and intense, at F 16. The result was that I was left—no detail to speak of in shadows, the high-lights fair, and picture generally chalky (that exposure just referred to is withheld from reproduction). On the other hand, you often wish a certain subject and the light is not very strong; but it is absolutely necessary to give not less than $\frac{1}{125}$ second exposure in order to be sure that moving objects will not photograph a blur. In such cases the lens referred to proves itself a true friend; all that is necessary is to use it at full aperture, and a fairly exposed plate will be your reward. I have found very, very few subjects that re-

quire a greater speed than $\frac{1}{300}$ second. For $\frac{1}{300}$ up to $\frac{1}{1200}$ (the shutter's limit), I always use the lens wide open. The accompanying seagull in flight was made at $\frac{1}{1200}$ second.

A point I found out, after considerable experience, is focusing with the Graflex, useful when taking moving subjects of any character — approaching, passing across or receding from the camera. Here it is: — we will suppose our subject to be an interesting native, with a large basket on her head, walking toward us up one of the streets of Mayaguez, Porto Rico. We look in the Graflex and see her coming; she comes nearer and nearer; we focus *with* her as she approaches; she is nearly as large as we desire on the negative, but still continues to come nearer; now — when nearly, but not quite as large as we wish on the plate, we give the large focusing thumb-screw wheel a decided turn in advance, thus focusing also in advance, and when the subject moves almost but not quite into focus, then, immediately, the press of the thumb on the left *makes the exposure* and our subject is in exact focus at the instant of exposure. The advantage in this is the fact that the critical focusing is done in advance, leaving the eye and mind solely centered on the actual moment of exposure when the subject *itself* moves into the exact place which *is the* focal-point by its *own movement*. However, it all must be done in less time than it takes to tell it. In objects moving away from you the movement of the focus would be the opposite to that just described, as in that case the lens would be advance-focused by turning same in advance toward the sensitive plate, instead of away from it. However, I feel positive that to those who may not already know of this method of “advance focus” it will, after a little practice, prove of *real value*.

In traveling, one of the greatest objections to the use of plates is the lack of a suitable place for changing the same. In a town of any size, such as Ponce or San Juan, one is generally sure to find a professional photo-studio, and after traveling several thousand miles in a large number of places, I have yet to find a professional who did not have sufficient courtesy to allow me the use of his dark-room for the few minutes required to change a dozen or two plates. Thus our problem of changing is solved — where a professional studio is accessible.

In small places (and in the interior towns, such as one finds in Porto Rico) a dark-room can always be quickly made in the following manner: Take a small four-legged table, of the usual height of about thirty inches, place the same against the wall of room, and then grab all the blankets, bed-quilts and coverings you can find and form the remaining three sides required around and below the table. Our dark-room is all ready and the real fun begins — that of arranging one's self in a position in the same so as to be able to work and perhaps handle two dozen 5 x 7 plates in a space two feet square. However, I have found from experience that the above is quite practical, and it really works well. A number of large thumb-tacks and a small candle ruby lamp prove useful accessories.

I know that many will ask, “Why not use a closet?” Certainly, if a suitable one can be found; but four-fifths of the time they will be “out-of-sight.” I don't remember having seen one closet during my entire trip through the island.



SEAGULL IN MID-AIR

NATIVE HUTS ON AN ORANGE PLANTATION

HUT AND TYPICAL NATIVE WORKERS ON AN ORANGE PLANTATION

AN AMERICAN BUNGALOW IN THE INTERIOR

A GROUP OF NATIVE CHILDREN

Photographs by Austin K. Hanks

A few words regarding development of Graflex exposures may not be out of place, at this time. In plate work (with Graflex) I always use the Cramer Crown plate, metol-hydroquinone developer, and a tank — kept exclusively for this purpose — for the development. The metol-hydroquinone stock solution developer is diluted with several times its bulk of water, and placed in tank (without any addition of 10% potassium bromide) at a temperature of about seventy degrees. The plates—usually twelve 4 x 5 at a time—are placed in this solution in tank and immediately afterwards, each plate, wet, is gently rubbed over with a tuft of wet absorbent cotton to remove all air-bells and particles of dust; this being done, the plates are allowed to remain for fifteen minutes without being examined, and with the top of tank covered so as to exclude every trace of even ruby light. At the end of fifteen minutes the entire developer is thrown away and a *fresh* solution of developer (the same proportion in every respect as the first) is added, but at a temperature of about seventy-five degrees or eighty degrees (in winter). In summer, none of the developer should be over sixty-five or sixty-eight degrees. The development by this method is completed, in accordance with exposure given, in a total of from twenty minutes to two hours. The advantage of this treatment is the bringing-out, absolutely, of all the detail in the shadows (in proportion to the exposure given), and at the same time keeping the high-lights correspondingly thin, so that all detail in both high-light and shadow is registered and retained in the print.

Now—in closing—just one more remark. All of the foregoing, I think, will really prove “worth while” to a large number of my *Photo-Era* friends, as it is all based on actual experience; but I am going to add another bit of experience which, I am sure, will be of interest to you all (and which, by the way, is original) but can be purely considered only as a joke. I have two books—not photographic—perfectly good books, books I would not blush to show to any one, but books I much prefer that most of my friends never see. Well, I did n’t want to tuck them away, for as sure as fate some one—and, of course, the wrong person—would find them, so here is what I did. I wrapped them up neatly with two pieces of plain wrapping-paper and tied with string like any ordinary package, but on each side I carefully wrote with blue pencil, “Open only in ruby light.” I have left them around, without any special care whatever and it is now over a year since the package was first tied up. “Open only in ruby light” worked admirably. Try it!

If you accept Art it must be part of your daily life. You will have it with you in your sorrow as in your joy. It shall be shared by gentle and simple, learned and unlearned, and be as a language all can understand.

WILLIAM MORRIS

Perceptions of the Visual Sense*

C. BAUMANN

FOR farther consideration of the center of interest in a picture we will now select another subject — an open landscape. The possibility of transposing the chief point of interest occurs here more frequently than in the case of a building. We have not the option of moving this point more to the right or to the left, but we can transpose it from the foreground to the horizon — in the extreme distance — and even to a point beyond, with the result that the aspect of the entire scene may be altered many times, in each instance producing a different effect. It would now seem as if, in the selection of an object to serve as the center of interest, we were free and untrameled; yet in reality this is the case only to a limited degree, the reason being that our freedom of will is unwittingly influenced by various phenomena, which lie beyond the scope of our purpose. This is best explained by a few illustrations. Let us imagine a landscape traversed by water. This side of the lake, in the foreground to the left, a meadow with a small number of cattle and a herdsman; to the right, in the foreground, several tall trees and, between them, a light-colored chalet. In the middle foreground, a narrow, tortuous road, leading to the water's edge, with a path branching off toward the cottage. The sheet of water extends from the center to the extreme left of the picture, and, at the farther shore, rises a range of hills, through which the eye perceives a mountain-chain forming the extreme distance of the landscape. Let us observe the landscape at different times during the day, selecting, for the first critical inspection, a morning hour. The misty morning air draws a veil over the lake and the background, and the whole landscape forms, as it were, an accessory to the group of cattle, which, through its animated movements, interests us more than all the rest of the landscape. We feel as does the child in the cradle, whose attention is arrested by a toy set in motion by its mother. The grazing animals represent for the moment the chief object of interest in the quiet landscape; the landscape itself constitutes in this case only an accessory to the entire picture.

An hour later, when the mist is less in evidence, without having been entirely dissipated, we view the landscape a second time. The sunlight has gained in vigor; the nearer shore asserts itself more clearly than the surface of the lake and, more particularly, than the hills and mountain-chain rising in the background. The animals now fail to excite our interest, as they are lying down and appear motionless. A light vapor still lingers over the watery surface and the hills. On the other hand, the chalet with the adjoining trees, brightly illuminated and glowing with color, stands out with such prominence, being effectively relieved against the somber background, that we must regard it, with its immediate surroundings, as the principal object in the landscape, and all else of secondary

*Extract from C. Baumann's "The Principles of Art, their Origin and Application." Translated from the German by Wilfred A. French.



AN ILLUSTRATIVE LANDSCAPE

importance. The different shades of green of the trees and the meadow, and the bright, cheerful cottage are set off against the lightly-bluish and mellow-toned background with extraordinary effectiveness. This time the brilliant coloring claims our attention, as did the motion a short time ago. Several hours pass, and again we view the landscape. The sun has risen higher and almost absorbed the morning mist. The cottage and its environments have lost for us color and charm, in that the entire landscape greets us more radiantly than before. But now the lake claims our attention; trees, meadows, chalet, the entire foreground and distance — all are subservient to the ruling *motif*. Although the air is still and scarcely a movement is visible on the lake, the eye is held captive for some time by the play of light on the watery surface and the shimmer of the glittering wavelets. But ultimately King Sol is too kindly disposed, his rays developing such dazzling splendor upon the waters of the lake as to mar the pleasure of seeing. . . . The day is declining; soon it will be dusk. The sun by this time is directly facing us, illuminating all objects on the side away from us. For this reason the contours of trees, hills and clouds are outlined against the bright sky with extraordinary emphasis. While the sky, alive with the play of light and color, monopolizes our attention, all terrestrial objects appear gloomy and colorless. Trees and hills tower like specters above the earth, resembling dark, flat figures, sharply relieved against the celestial background. There is no doubt that at this moment the gorgeously-colored evening sky, together with the sharply-outlined objects rising above the horizon, is the center of interest in the picture spread out before us, and that all other objects in the landscape are of secondary importance — being, in fact, mere accessories.

Paper Negatives in the Geological Survey

H. F. LAMB

THERE has been developed in the photographic department of the Geological Survey, a process of making and using paper negatives, which both expedites the work and decreases the cost in no small degree. An average of two thousand maps, tracings, drawings and other pieces of graphic matter in line, require reproduction every year, in their work, besides numerous reprints of negatives already in existence, of similar pieces of copy already on file.

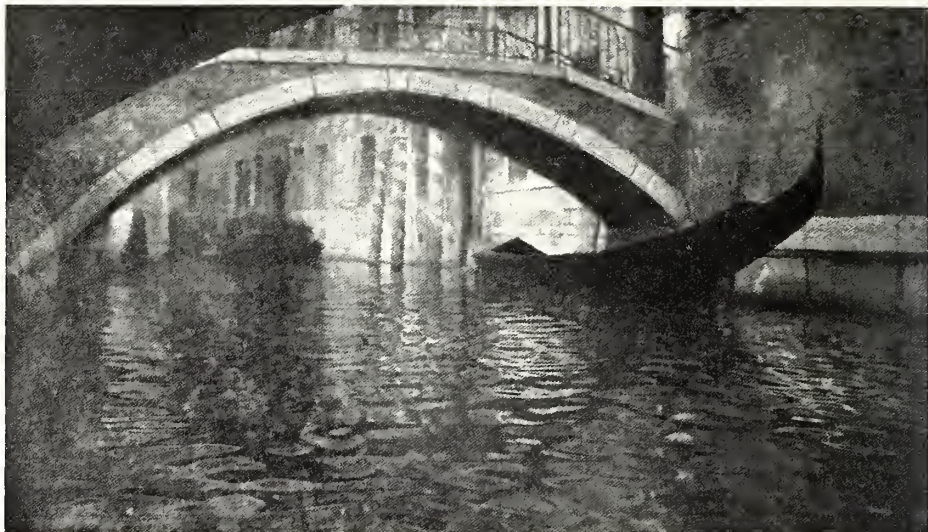
To have made these copies on glass would have required an enormous storage capacity, even if glass large enough could be obtained. The largest paper negative made in single sheet is 36" x 50", and glass of such a size costs heavily, besides being very heavy, cumbersome and difficult to store.

The paper negative was evidently the solution, but the paper to be obtained for such purposes at the time this work was taken up was not satisfactory for the results wanted. Experiments were made, therefore, with a view to producing a negative paper which would give the maximum of contrast with the minimum of half-tone, which would be fast enough for quick exposures, which would keep well, not curl too violently, and which would act, in printing, exactly as well as gelatine or collodion negatives mounted on glass.

Such a paper was finally evolved, the formula submitted to paper manufacturers, and is now supplied to the Survey direct, being made for that use alone. Even more important was the paper from which these negatives were to yield positive prints. In order to do away entirely with curl, frilling, blisters and silkiness of surface which would not readily take ink, a paper was required having no—or very little—gelatine. This paper, also, was wanted to give great contrast and no half-tone at all. It can be imagined that its manufacture became somewhat of a problem, but when it was demonstrated that it could be made, a prominent manufacturer of photographic supplies took the matter up, and now supplies it, exclusively, to the Geological Survey.

When a piece of copy comes to the laboratory to be reproduced, it is copied, not in the camera, but directly upon the sheet which will be the negative. The copy is placed, face inward, in the huge printing-frame, the sensitive sheet laid in contact as in ordinary printing, and then the air is exhausted between the back of the frame and the glass by means of a pump. This gives absolute contact all over the surface. Exposures, for making the negatives, run from a fraction of a second, for thin copy, such as tracing-cloth, to several minutes for copy on cardboard. Large sheets of cardboard, too thick to see through, can be printed with the powerful violet rays of the arc lamp employed to do this work.

The paper negative is developed in an ordinary solution of ortol-hydroquinone—ortol being used instead of metol simply because metol is poisonous to some workmen. Any good paper developer works well with this paper. The result of



G. CASTRUCCIO

A BRIDGE IN VENICE

THIRD AMERICAN PHOTOGRAPHIC SALON

development is a sheet of uniform density and blackness, with the black lines of the original copy in pure, uncolored white, as is shown in the illustrations. These sheets are fixed fifteen minutes — like any chloride or bromide paper they give no visible indication of the completion of fixation — and are then washed in the usual manner, after which they are dried — on drying-racks of cloth, if no special hurry is to be made, or beneath an electric fan if there is a hurry.

From this paper negative, in its present form, without waxing, or any further treatment whatever, the print is made, in the same manner that the negative itself was made — by placing in the printing-frame, covering with a sheet of the paper used to make the prints from, and which, as noted above, is different from the negative paper, and exposing as before. It should be noted, however, that although the exposures differ in making the original paper negatives, due to the variation in the thickness of the copy, the exposures for the prints are almost always uniform, amounting to about six seconds.

These prints are developed in the same way — same tray, same solution, same formula, and yield prints with jet black lines on a perfectly white ground. Having scarcely any gelatine emulsion — none that can be detected — they fix in the minimum of time and are also washed very quickly. When dried, they lie perfectly flat and free from curl, a feature which is very essential in such reproductions. The finished prints, and the original paper negative, together with the copy, are returned to the division making the requisition. There the paper negative is filed, to be brought forth and sent up to the laboratory for reprinting when extra copies are required.



LEWIS LLOYD

AN OLD STREET, WARWICK

It is here that the ability to store such negatives makes a great saving. With thousands now in existence and two thousand and upwards coming into existence every year, and all valuable, it is obvious that, even if glass could be cheaply obtained in the required sizes, it would be impossible to store it. Consequently, if it were not for the paper negative, such work would have to be done by copying in the camera with the wet-plate process, resulting either in an unnecessarily large number of prints being made before the plate was destroyed, or the possibility being always present of having again to do the same work over when the edition of reproductions was used up. This would, of course, waste time, pile up the work, cut down the reproductive ability of the laboratory and thus increase expense. The saving in money is represented, therefore, not only in



G. R. BALLANCE

A WAYSIDE SHRINE

the saving of cost of glass over paper, but in the time saved in not having to make an original negative but once for any given piece of copy.

The speed with which reproductions of tracings can be made is surprising. The illustrations which accompany this story were made expressly for it, and in the presence of the writer. The tracing-paper negative was laid in the big pneumatic printing-frame, a sensitive sheet of negative paper placed upon it, the frame closed, air exhausted, an exposure of possibly half a second given by arc light, air released and frame opened, negative developed, fixed, rinsed, laid on a sheet of board covered with zinc, and with a wet sheet of printing-paper beneath the negative, exposed to the same arc light for four seconds, after being squeegeed in contact, stripped, print developed and into the fixing-bath, all in less than



WM. C. STARR

THE BIRCHES

three minutes — less time than it takes to tell it. Print and negative were made, fixed, washed and dried and delivered to me, within half an hour!

There being no halation in paper negatives, prints can be made from tracings having lines innumerable, all but in contact with each other, and with space between them hardly to be seen with the naked eye. The negative preserves this detail intact, and the print reproduces it exactly, so that in all respects the print is the equal of the original. In all respects save one, perhaps — prints and negatives made on paper are liable to change their dimensions from dampness, so that there may be, at some future time, a difference of a fraction of an inch in the size of print and original copy. But it is seldom that physical measurements are made, save for proportion, which remains the same during stretching and shrinkage.



L. O. GRIENWALDT

AN IDEAL HAVEN

Development takes place very quickly, in both negative and print, a maximum printing density being obtained in the paper negative in less than thirty seconds with an average exposure. The negatives are similar to glass negatives, in that a technically imperfect negative—one over-exposed—will yield a perfect print. The finer lines may be somewhat darkened by silver deposit, and yet their relative density to the rest of the negative be such that they will yield a bright and perfect print. The negative paper is rich in silver and the deposit is a deep solid black, so that when held up to the light the negative looks like a remarkably fine wet-plate line-cut negative.

Reverting to the time required to produce a positive print from copy, if it is essential, matters can be expedited by not fixing the negative after development, but squeegeeing it wet with developer to the wet-down sensitive paper and ex-



G. R. BALLANCE

ON LAKE MAGGIORE

posing it. Development and exposure then proceed side by side, and the print, stripped from the negative, is ready for the fixing-bath. The workmen regard proper fixing, particularly for the print, as of more importance than thorough washing, and their experience bears out their contention. Paper negatives and prints several years old seem in perfect condition, many of them made and finished without that thorough washing which is generally regarded as essential to permanency. The negative paper, having a gelatine emulsion, of course takes longer to fix and wash than the printing-paper, the emulsion of which is so attenuated as to be imperceptible.

The paper is stored in closets arranged expressly for the purpose.* The printing-frame, with its air-pump and exhaust-chamber and the double rubber-and-cloth back from which the air is exhausted to produce uniform and accurate contact between copy and paper, even when the frame is used to its maximum capacity, was designed and made expressly for this work, although pneumatic printing-frames are used in other photographic processes elsewhere. The printing-light is an arc, inclosed in a chamber closed by a shutter worked by the foot, and exposures are possible as short as a fifth of a second, and as long as may be required.

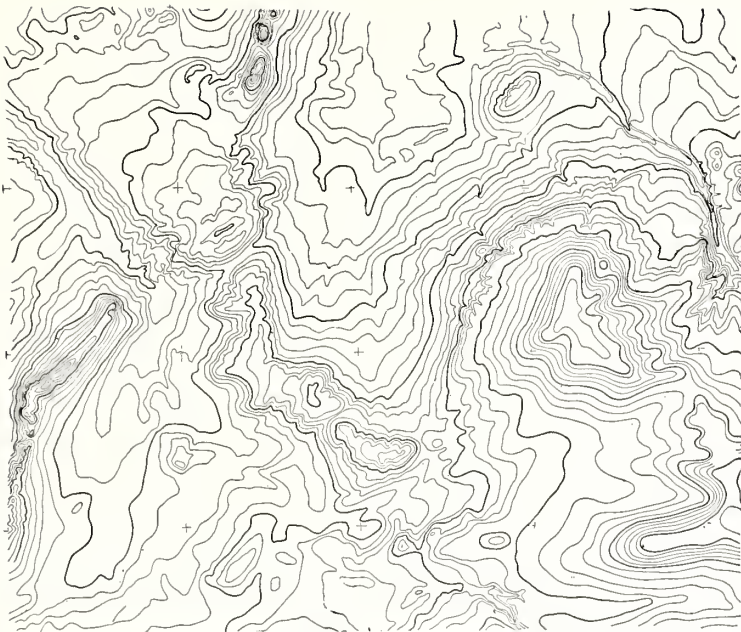
The paper, both negative and print, is worked in a light yellow working-light. No special precautions are taken in its storage, beyond the fact that the closets, of course, are light-tight; and the keeping quality of both papers is excellent.

Another idea which has been worked out in the Survey and which saves much valuable time, is a sensitive tracing-paper. Usually, when a map or other drawing is to be reproduced, say in blue-print, a copy of it is made by tracing upon paper or cloth with a pen. Sensitive tracing-paper has been and is made and used in the Survey, by which the original tracing is made in a few minutes by a photographic process similar to that described above. The difficulty, of course, is to coat the paper so that it will not tear or cockle, on account of its thin texture, but this problem has been satisfactorily solved and the discovery is now in active use.

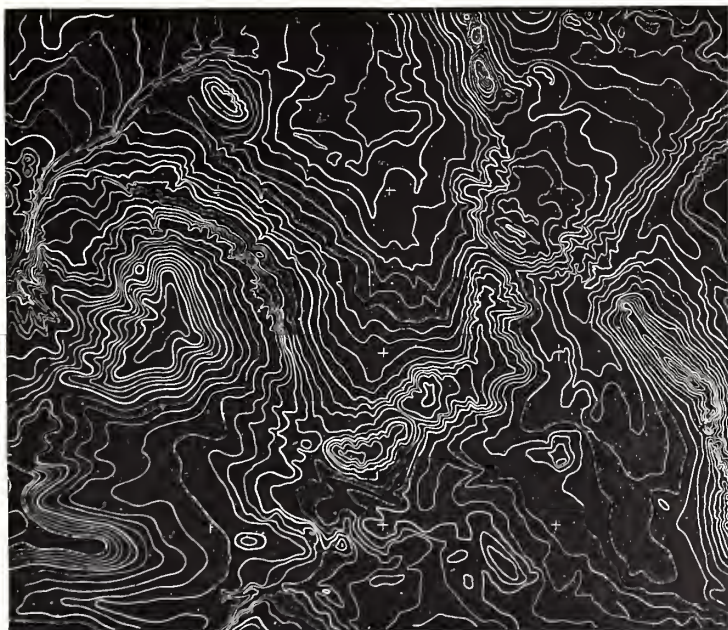
The whole principle in the work is the saving of time and material, and the production of the very best possible work. No time, trouble or money expenditure has been deemed too great to further this ideal, and the result is that in all the departments of the photographic laboratory, of which the map-printing is but one, there is a maximum of efficiency for the number of men and amount of material employed.

The map reproductive process as a whole is a very beautiful one, and commands the admiration of all photographers who see it. It is so simple and so perfect; the speed with which it can be worked is so remarkable and the results are so fine, that it is a matter of pride not only to the laboratory, the men who work it and the brains which originated and improved it, but to those who, in using the results of the process, benefit by its existence.

*See article and pictures by C. H. Claudy, elsewhere in this issue.



FINISHED PRINT OF MAP



PAPER NEGATIVE

*Both illustrations were made expressly for PHOTO-ERA, by courtesy of F. E. Baird,
Chief Photographer, U. S. Geological Survey*

EDITORIAL

Shall Dealers and Manufacturers Participate in Conventions?

THIS question is manifestly one for the photographers to decide. It has been discussed pro and con, and, while not prepared to offer a solution of the matter, we can, at least, present a suggestion or two that may help bring about a clearer understanding of this controversy.

Is it not true that the photographers' conventions — referring to the annual meetings of the national and state organizations — are, as a rule, more successful, from both educational and financial standpoints, when the dealers and manufacturers coöperate with the photographers, than otherwise? We have personally attended twenty-seven conventions of the national body and are convinced that, had the dealers and manufacturing-firms not joined forces with the regular delegates and shared the expense attending these annual reunions, the craft would have been deprived of, to them, the most important event of the year. As for the educational value of the display of apparatus and accessories, and demonstrations of technical manipulations, this cannot be disputed. It is well known that the financial affairs of art clubs are less well managed when laymen are excluded from active membership. Eliminate from conventions the dealer and manufacturer, they who occupy the largest amount of floor and wall space — thus contributing substantially to the official treasury — and the photographic organization would soon face a financial crisis. After the delegate has gone down deep into his pocket to defray traveling-expenses and hotel-bills he is not disposed to help wipe out a deficit. The last convention of the Photographers' Association of Illinois, one of the most brilliant events of the kind recorded in the history of that State, ascribed its success largely to the active participation of the dealers and manufacturers. As the concluding ceremony the delegates assembled unanimously passed a resolution to that effect. The third annual reunion of the P. P. A. of N. Y., April 3-5, under the leadership of Pirie MacDonald, was a notable exception, as all the world knows. But to conduct a national convention along similar lines is, obviously, a different proposition, and its success decidedly problematical. We should like to see the experiment tried. Who are the men willing to plan and execute such an undertaking?

The Photography of Child-Life.

AMONG the workers whose pictorial achievements are attracting widespread attention in the photographic world is Mrs. W. W. Pearce, of Waukegan, Ill. Her eminent success in that most delightful of pictorial fields has inspired many others to similar efforts of activity; but, judging by numerous requests for information on that subject, which have been addressed to the editor, it is evident that the photography of children is not so easy as it

may seem. Many wish to ascertain the secret of Mrs. Pearce's art, but one may as well try to analyze the mystery of the nightingale's song. Upon inquiry we find that this lady's success is due to her passionate love of children, her intimate knowledge of the ways of the little people and her charming and sympathetic personality. Many women have this precious gift, but not all, unfortunately. Fancy a woman with a natural dislike for children — one finds this childless, abnormal type among the fashionable class, readily enough — trying to make friends with a sunny little baby girl! Her simulated, insincere tone of persuasion makes a meagre impression on the infantile mind; the little one responds feebly, if at all, and then turns away. Such a person would hardly be expected to produce a wholly successful photograph of a child. The little folks are very susceptible to affection and sympathy — emotions which, when blended with womanly tact and a magic influence, as no doubt exercised by Mrs. Pearce in her enviable pursuit, place an effective instrument in the hands of a photographer of children.

Photographic Literature

THE present year has been unusually productive of valuable contributions to photographic literature. Of particular interest to picture-lovers are the sumptuously-illustrated annuals published in Berlin and Halle, and which present, in a highly-artistic manner, the work of the most advanced pictorialists of the present day. Earnestness and thoroughness are marked characteristics of German research in all departments of science. What Germany has accomplished in the realm of photography, notably in optics and chemistry, forms one of the most brilliant chapters in the history of the art. What serious worker is not familiar with the exhaustive contributions to photographic thought by those brilliant investigators — Dr. J. M. Eder, Dr. Adolph Miethe and Prof. Hermann Vogel?

At no time since the days of Daguerre has there existed a more enthusiastic activity in photographic research than in Germany at the present time. The products of those fertile minds appear with astonishing rapidity, finding quick appreciation by enterprising publishers. There is no doubt that, although Germany cannot claim to have originated the *Neue Richtung* in photographic portraiture, that nation has developed a group of portraitists — Perscheid and Duehrkoop among the number — which, for distinctive and artistic interpretation of human character, compels admiration, and this in spite of the fact that its achievements are persistently ignored or belittled by a jealous English photographic press. Baumann's admirable treatise "The Principles of Art, their Origin and Application," published, recently, by Knapp of Halle, lifts the veil of mystery which envelops nature's secrets, and points out the way to a successful solution of the problems which confront the youthful pictorialist. In this country no work on photography in recent years has met such honestly-merited success as the admirably-written volume, "Art Principles in Portrait-Photography," by Otto Walter Beck.

THE ROUND ROBIN GUILD

Conducted by ELIZABETH FLINT WADE

A department especially designed for the amateur photographer and the beginner, in which information, advice and criticism will be freely given. Membership may be obtained by sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, Mass.



A. W. ENGEL

FIRST PRIZE — A SHOWERY DAY

"The harvest-fields are golden,
The scarlet poppies flame,
The harebell shakes her head at death —
But Summer's on the wane."

We are loth to admit the fact that Summer is going, and going rapidly. But it is too true that the days are growing perceptibly shorter, and one can hear the rustle of Autumn's footsteps at the dying of the day. Vacation will soon be a thing of the past, and workers must return to the spindle and the loom, to the counting-house and factory, to the school and the church, to all the varied industries, each of which claims its special followers. It behooves us, therefore, to make the most of the days that are left of this glorious summer.

August is one of the best months of the year for landscape work, if one takes advantage of the peculiar conditions of the atmosphere, for there are days when smoke or haze in the air gives a beautiful atmospheric effect and landscapes photographed at such times have a softness and elusiveness which is a great charm.

We long ago abandoned the idea of photographing a landscape as if it were viewed through

a microscope. One tries now to convey the impression received by the spectator when enjoying the scene before him.

Another thing to be avoided is the making of extended views. A panorama is interesting but not artistic. Sidney Smith advised people to take "short views," and the amateur who wishes to make artistic landscape photographs would do well to heed Sidney Smith's advice and take "short views," instead of including a goodly share of the universe in his picture.

The best aid to composition, either in figure-studies or in landscapes, is simplicity — the fewer objects included the more satisfactory the picture.

One reason why amateur photographers seldom tire of their hobby is because it is always presenting new and interesting features. Even in the mechanical work of printing there are so many kinds of paper from which to choose, so many different tints and tones to be obtained, and so many artistic ways of finishing and mounting, that this part of photographic work, which is considered often rather tedious, never becomes monotonous.



EDGOR S. GAGE SECOND PRIZE — A SHOWERY DAY

A very attractive way of printing is to print on one sheet of paper four or five pictures from as many different negatives. This is not by any means so difficult as one who has never tried it may be inclined to imagine.

The necessary apparatus for this combination-printing is an extra large printing-frame — 12 x 14 is a good size — fitted with a sheet of plain glass; a vignetting-glass; a bottle of Straus' marl or a cake of Gihon's opaque; "cut-outs" of different shapes and sizes; adhesive strips; and plenty of black needle paper or yellow post-office paper. The "cut-outs" may be bought of any dealer in photographic supplies; and as they are very inexpensive, it is better to buy them accurately cut than to attempt to make them.

The negatives chosen for the picture must have some relation to each other, such as landscapes from some one locality; interiors of different rooms in a house, with a small picture of the exterior of the house; a number of tree negatives; seashore pictures; etc., etc.

Select the negatives and group them in the way in which they are to be printed, and mark on a sheet of paper the size of the printing-paper the position which the pictures are to occupy, remembering that the negatives are reversed in the printing. The most satisfactory way of arranging the pictures is to make blue-prints and then group these prints. One thus sees not only the arrangement as it is to appear, but also just what parts of the negatives are to be eliminated or left out in the printing-process.

Adjust the cut-out on the first negative to be used, and attach it to the glass by means of adhesive strips. Note the place on the paper which it is to occupy, and cover all the clear glass in the printing-frame with opaque paper, except that which is to receive the print, letting the edges lap over the outside edges of the cut-out. Place the sensitive paper over the negative and print till deep enough; remove, and store in a book till the next negative is placed in position. Remember that all parts of the clear glass are to

be covered each time, with the exception of the space for the negative to be printed from.

One can use cut-outs for some of the prints and the vignetting-glass for others. The grouping of pictures in the magazines gives one ideas as to artistic arrangement. The picture, when all the prints have been made, is toned in the usual way. The printing-out papers are more satisfactory for this sort of print, unless one is a skillful platinotype printer and can judge very accurately of the depth of printing.

Another way of printing from several negatives is to select the part of the negative to be printed from and cut a piece of paper the exact size that the finished picture is to be, doing this with each negative. Paste these "patterns" very lightly to the sheet of glass, and then with either the marl or the opaque paint over all the clear glass. Remove one of the pieces of paper and adjust the negative designed for it in place, and make the print, and so on till all the negatives have been printed from. Of course the paper already printed on must be protected while the remaining prints are made.

If a large sheet of paper is used the print does not need to be mounted unless the prints cover the paper, leaving too narrow a margin. In such a case mounting will be necessary.

The principal thing to be observed in combination-printing is that the sensitive paper must be so masked that the print will come exactly in the position designed for it.

In choosing negatives for this sort of printing select those which have about the same density and therefore have the same printing-quality.

PHOTOGRAPHING BIRDS

MANY of our Guild members are interested in making photographic studies of birds and wild animals, a pursuit which requires a very rapid plate, a quick lens of long focus, a noiseless shutter, and an inexhaustible supply of patience.

With these requisites one is able to obtain many interesting pictures, pictures which give the layman a much better idea of wild life than all the reading he can obtain from the many books written on the subject. In fact, it is to photography we owe much of our knowledge of our friends in feathers and fur.

All, or nearly all, photographic studies of either birds or beasts have to be made by the instantaneous process. The subjects are so uncertain and erratic in their movements that it is impossible to calculate with any certainty their positions.

Would-be aeronauts have long studied the flight of birds as guides to the solving of the problem of aerial navigation. The late Professor Langley made many photographic studies with this aim in view — that of applying to the construction of his airship the principles which govern the flight of the denizens of the air. For this purpose he had erected in the grounds of the National Zoo two wooden towers three hundred feet distant from each other. In each one he stationed a photographer and supplied them

with cameras of a special make constructed on the plan of a shotgun. An electric battery was placed on the ground midway between the two towers, with wires running to the towers and connected with the shutter mechanism of each camera.

A man was stationed by the battery, and whenever a bird appeared flying between the two towers the photographers immediately "sighted" it with their cameras and kept it in the field of the lens. Then at a signal from Professor Langley the man at the battery touched the key and the exposure was made. The photographs thus obtained showed the bird in flight from two opposite points of view; and as the camera was fitted with an apparatus which magnified the image, the pictures thus obtained were not only extremely interesting, but of great value as showing the motions of the bird in the air and how it sustained and controlled its body during flight.

Of course it is not to be expected that our Guild members will undertake any such elaborate method of studying birds in flight, but one must go to a certain amount of trouble and pains to secure interesting pictures of any subject.

In the making of bird-studies the beginner is advised to select for his subject a bird that nests near the ground. If one is not able to screen himself among the bushes, then it is a good idea to make a "blind" of green branches where he can be concealed from the observation of the bird. The camera must be set and focused and the shutter ready for instant action. Then when all is in readiness the amateur must wait the pleasure of the bird. One special point to bear in mind is that a bird is always on the alert for enemies and when it appears the most serene it is ready for instant flight. An unusual noise, a sudden movement, will send the bird away, sometimes for a long time.

Where there is no chance for screening one's self from the eyes of the bird, then set up the camera and cover it with green leaves, attach a long rubber tube to the shutter, and withdraw to a discreet distance, or as far away as length of tube will permit.

Some birds are less timid than others, and if one sits down on the ground and remains without movement the bird will after a while return to the nest, feed the young, and fly about with no regard for the intruder.

Photographing birds whose nests are built high up in trees is not so easily done. I have before me a picture made by a member of our Guild, Mr. F. S. Andrus, of Lowville, N. Y., showing the artist and his camera in a tall tree, his camera fixed to a branch of the tree and himself seated on the limb waiting for a fitting opportunity to photograph a humming-bird on its nest. The picture is very interesting, and shows how enthusiastic our Guild member is in the pursuit of his pictures of bird-life.

In the development of pictures made under conditions where the shadows made by the foliage make the light poor, one should use a developer which brings out all the detail. Metol



H. S. ADAMS

THIRD PRIZE—A SHOWERY DAY

alone, or metol hydroquinone, will be found the most efficacious. In photographing under such conditions set the shutter at as slow a speed as possible, to obtain a good result.

CASES FOR STORING AND FILING FILMS

(Reprinted by request for new subscribers)

THE material is manila tag board a trifle heavier than postal-card stock. Each case holds five films, and the cost of one hundred cases does not exceed seventy-five cents, thus making a storing-capacity for five hundred films at a very trifling figure.

The boards are cut in six sizes. The largest size is $6 \times 6\frac{1}{2}$; the second, 6×6 ; the third, $6 \times 5\frac{1}{2}$; the fourth, 6×5 ; the fifth, $6 \times 4\frac{1}{2}$; and the sixth, 6×4 . The price of the board includes the cutting. The six different-sized pieces make one case, the left-hand side and bottom being bound with passe-partout binding. A triangle is cut in the center of each free edge of card for convenience in slipping films in and out. The illustration shows the completed case.

One accomplishes a great deal more by working in a systematic manner, and there is a certain routine in the making of these cases which hastens the work very materially.

First cut the passe-partout binding — white being the color chosen — into strips, half being six inches in length and half six and one-half inches in length. Keep the two sizes separate and fold them lengthwise through the center, the gummed side in. Next arrange the cards in

piles, each size by itself, and place them in rows, beginning with the smallest and ending with the largest. Now take up one of the largest cards, then one of the next size, until you have one of each size. Lay this pile on the table and make up another set, laying it on top of the first with the cards placed in an opposite direction, and so on till all the cards have been separated into sets, laying them in alternate directions to facilitate handling for binding.

Take up a set of the cards, tap them lightly on the table to get the edges even, and clasp a paper clip over the right-hand edge, which is to be the free edge. The next step is the cutting-out of the triangles, the one on the smallest card being cut first and serving as a guide for the others.

Take one of the longer strips of binding, moisten it with a soft brush, and wetting it by just one sweep of the brush from end to end. Lay the binding with the fold coming to the edge of the cards on the left-hand side of the case, rub it down and turn the rest of the strip over on the reverse side. Gum one of the shorter strips and bind the bottom of the case in the same manner.

The cases are now ready for lettering and numbering. On the binding at the left is written the general title of the collection. If, for instance, they are foreign views, write the name of the country, as: Italy, France, and the sub-title, the special locality, as: Florence, Paris. At the left of the triangle write the number of the negative and at the right of the triangle its name. The numbers of the negatives themselves are written in white ink on the margin of the films.

The cases are numbered 1, 2, 3, 4, 5, etc., and it will be seen that the negatives go in series of five, one of the easiest ways of numbering.

The indexing is as simple as the cases. The number of the case is written in the book, and below it the numbers and titles of the negatives which it contains. Thus: Number of Case, 5. General title, Italy. Sub-title, Florence. Number of negatives with titles:

No. 21. Along the Arno.

No. 22. Ponte Vecchio.

No. 23. Goldsmiths' Shops.

No. 24. Piazza del Limbo.

No. 25. Ponte San Trinità.

The cases are set on the free or open end with the title at the top. In this position they are protected from dust. They are stored either in pigeon-holes or boxes. The number of the case may be marked on the edge of the case, as the case is an eighth of an inch thick; but without this number it is a simple matter to find a case, as they are placed according to numbers and not more than twenty in one pigeon-hole or box.

One may make a hundred of these cases in an evening, and once used they will be acknowledged the cheapest and most convenient of all film cases.

A CLEVER AMATEUR CLUB

A VERY bright amateur photographers' club was started on the coast a few years ago, and is still doing business. It has only twelve members, each member lives in a different city, and San Francisco is at one end of the line and New York City at the other. The way it started was this. A young amateur living in New York conceived the idea of having an "Ocean to Ocean" photographic club. He therefore wrote to a friend living in Buffalo, told him of the plan, and asked him to send his letter to a friend of his own living in Cleveland, requesting him to send it on to a friend of his own in Chicago, and so on along the line, till the twelfth member was located in San Francisco. The originator of the club then made a book 10 x 12 in size with, pasted on one of the leaves, a picture of his own that he considered very good; on the opposite page he wrote a description of the picture, the manner of making it, the kind of lens used, plate, time of exposure, time of day, developer with formula, printing, etc., and sent it to his nearest club neighbor. This member added a print of his own to the book, made a criticism of the print already in the book, and sent it to his nearest club neighbor; and so on until the book reached San Francisco. This member added his print — which was the twelfth — and sent it back to the last member from which it was received, and thus it made the journey back to New York, its return journey allowing the members to see the book in its completion. A book was sent out the first of each month, and at the end of the year the numbers are distributed among the members.

They are planning now to start a "Round the World" Club, and are already in communication with friends living in foreign lands.

Monthly Competitions

Closing the last day of every month.

Address all prints for competition to PHOTO-ERA. The Round Robin Guild Competition, 383 Boylston Street, Boston, Mass.

PRIZES

First prize: Value \$10.00.

Second prize: Value \$ 5.00.

Third prize: Value \$ 2.50.

Honorable Mention: In addition to the awards, the names of those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be published.

Prizes may be chosen by the winner, and will be awarded in books, magazines, enlargements, mounts, photographic materials or any article of a photographic or art nature which can be bought for the amount of the prize won.

RULES

1. These competitions are free and open to all photographers, whether or not subscribers to PHOTO-ERA.

2. As many prints as desired, in any medium, mounted or unmounted, may be entered, but they must represent the unaided work of the competitor.

3. The right is reserved to withhold from the competitions all prints not up to the PHOTO-ERA standard.

4. *A package of prints will not be considered eligible unless accompanied by return postage at the rate of one cent for each two ounces or fraction.*

5. *Each print entered must bear the maker's name, address, Guild number, the title of the picture and the name of the competition for which it is intended, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.*

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA. If suitable, they will be reproduced, full credit in each case being given to the maker.

SUBJECTS FOR COMPETITION

July — "Landscapes." Closes August 31.

August — "Waterscapes." Closes September 30.

September — "Sunsets." Closes October 31.

October — "Windows and Doorways." Closes November 30.

November — "Genre Studies." Closes December 31.

December — "Home Portraiture." Closes January 31.

January — "Illustrated Poem." Closes February 28.

February — "Mountains." Closes March 31.

March — "Atmospheric Effects." Closes April 30.

April — "Decorative Photography." Closes May 31.

AWARDS — A SHOWERY DAY

First prize: A. W. Engel.

Second prize: Edgor S. Gage.

Third prize: H. S. Adams.

Honorable Mention: Dr. W. F. Zierath, Wm. A. Rheinheimer, Flora von Cpeller, Mrs. M. W. Sawyer, H. H. R. Randolph, Mrs. J. F. Jaeger, Madison Phillips, Charles W. Busiel, Edward A. Walker and Frank N. Pearson.

A FINE INTENSIFIER

COPPER sulphate combined with iodide of potassium makes a fine intensifier for weak negatives full of detail but without the necessary strength for a satisfactory print. Make up a solution of sulphate of copper, two hundred grains; iodide of potassium, sixteen grains; bromide of potassium, forty grains dissolved first in two ounces of water. Dissolve the ingredients in order named in six ounces of water, adding last the solution of bromide of potassium. The bath must be prepared twenty-four hours before use; allowed to settle and the clear part of the liquid decanted off. Immerse the plate in this solution until it turns a deep yellow. Wash and transfer to a bath made of ten ounces of water, two ounces of sodium sulphite, and ten grains nitrate of silver. This removes the yellow color and turns the negative to black. Wash well and dry. If intensification is not strong enough, repeat the operation.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.

BENNETT M.—For an acid fixing-bath use hyposulphite of soda, four ounces, acetone sulphite, one-fourth ounce and water, sixteen ounces. Wash plates well after fixing.

S. A. H.—The silver stains on your negatives can be removed by first soaking the plate for ten minutes in a solution of potassium iodide, allowing twenty grains to each ounce of water. Rinse well and place it in a solution of cyanide of potassium made up in the proportion of thirty grains to the ounce. If the stains are old, rub the negative in the latter solution with a wad of surgeon's cotton, using rubber finger-tips to protect the fingers from contact with the solution. In using solutions of this kind the plate should always be handled with a plate-lifter.

ANNA D.—To dissolve hypo quickly pour over it boiling water. Hypo should always be strained before using, as it is usually full of impurities. A good way to prevent the impurities from getting into the water is to tie the hypo in a

piece of cheese-cloth, lay it in the receptacle and pour boiling water over it. The hypo dissolves quickly and leaves all the impurities in the cloth.

CHARLES G. R.—To brighten the color of your blue-prints which you say are dull and lifeless, lay them for a few minutes in a three per cent solution of oxalic acid.

L. N. TATE.—Do not use pyro for bromide prints or for gaslight papers of any kind. Hydroquinone is an excellent developer for prints where one desires contrasts. Metol-hydroquinone will give excellent result. Oxalate of potash is used for platinotype prints. Buy the salts ready prepared for use by simply dissolving in water.

D. W. J.—By local development of a print is meant the coating of a platinotype print with glycerine, then with developer diluted with glycerine over such parts of the picture as one wishes brought out and leaving untouched those parts which it is desirable to have eliminated. Directions for this process, which is called glycerine development, were given in a recent number of PHOTO-ERA. A copy will be sent you if you will enclose twenty-five cents, with name and address.

A. H. H.—A good formula for metol developer is made as follows: Metol, fifty grains; sulphite of soda crystals, one-half ounce; water four ounces. No. 2. Carbonate of potassium, one ounce; water, ten ounces. For development take equal parts of these solutions and add six parts of water. You can buy adhesive strips for use in making slides, etc., and they are much more convenient than to gum strips yourself. Of course you can do this, but you will find the time and annoyance saved will more than compensate for the trifling difference in the expense.

JOHN M. KANE.—To brighten platinotype prints where the detail seems to have sunken into the paper brush them over with artists' fixatif. This you can buy ready prepared, or you may prepare it yourself, using one ounce of mastic varnish to eight ounces of alcohol.

ALLEN FORBES.—Synthol is a developer manufactured in England, its foundation being obtained from orcin, a crystalline compound obtained from certain lichens. It can be used without an alkali. A formula which gives black tones and makes a negative of excellent printing-quality is made as follows: synthol, forty grains; sodium sulphite, one ounce; water, ten ounces; potassium bromide, twenty grains.

BERTHA B.—The sulphur toning of bromide prints is effected by immersion for a considerable length of time in a hot solution of alum and hyposulphite of soda, after the print has been developed, fixed and washed. Full directions for this process have been given in this department in a recent number.

BELLA DAMON.—Would advise taking a film-camera for an extended trip. The daylight-loading cameras are very compact and convenient and one can obtain films for them in almost any country. Photography is the universal pastime of the world, and it is hard to go to a place so remote that one does not find camera-supplies.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

Conducted by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to Phil M. Riley, 383 Boylston Street, Boston, Mass.

SEPIA TONES ON VELOX

VELOX prints that have acquired a yellow color from over-development may be toned a beautiful sepia, says H. Baker, in an article in the *British Journal of Photography*, by converting the black metallic silver of the paper into silver sulphide. He gives the following process. The prints are first bleached in a solution of potassium ferricyanide, 200 grains; potassium bromide, 300 grains; water, 5 ounces. When the prints become markedly yellow they are washed for five or ten minutes and then toned in a weak solution of sodium sulphide, a few drops of a saturated solution to ten ounces of water being strong enough. The prints should be toned one at a time and should remain in the toning-bath several minutes after the conversion is apparently complete. They are then transferred to a dilute solution of chrome alum, and after five minutes removed to the washing-tank.

SENSITIZING CARBON TISSUE

THE home sensitizing of tissue is the simplest of photographic operations, says Owen Roberts, in *Photography*. I myself always use the citric acid and ammonia formula, which is as follows:

Potassium bichromate	½ ounce
Citric acid	1 dram
Water	25 ounces

When dissolved, strong ammonia is added drop by drop with stirring, until the orange color changes to a yellow. The change is very distinct, but I have heard a photographer say that he could never be sure when it had taken place. In such a case a little of the solution may be poured into a separate glass before adding the ammonia, and kept for comparison. When the change has taken place the portion put aside may be added, and unless it is comparatively large, or the photographer has been particularly careful not to add a drop more than is necessary, he will find that even after adding it to the main quantity the yellow color persists. If it does not, another drop of ammonia will generally put matters straight again. In this solution the tissue is immersed a sheet at a time, and is left for three and a half minutes, which I time with a little "egg-boiler." It is then taken out, drained for a minute, and squeegeed gently on a clean sheet of ferrotype, on which it is left to dry. I sensitize pieces of tissue 9 x 7 inches, and then, cutting a quarter of an inch off all four edges, it divides up into four full-size quarter-plate pieces. Whatever size tissue is used, it is a wise precaution to sensitize a piece half an inch larger each way, and then, just before printing, to trim the tissue down on all four edges. In this way the part which has been

most exposed to the atmosphere during drying is removed; and, I believe, if this is invariably done, all need for a safe-edge is removed. The tissue on the ferrotype need not be dried in the dark, but stood aside in any ordinary warm room; so long as it is not put in direct sunlight or out-of-doors, there is no fear of the light getting to its sensitive surface and spoiling it. It should be left on the ferrotype till it is actually wanted for printing, as this protects it not only from light, but from impurities in the air, which, in carbon work, are almost as injurious. It is best to sensitize tissue a couple of days before it is wanted for printing, as this gives it time to get thoroughly dry, and so does away with any risk of tearing it in trying to get damp tissue off the ferrotype; it is important, for other reasons also, to print with well-dried tissue.

LOCAL WORK IN CARBON PRINTING

BY means of a tuft of absorbent cotton it is possible to accomplish a certain amount of local treatment in carbon-printing provided the transfer-paper is smooth. Care is, of course, required, and rough transfer-papers make it almost out of the question to work on the surface of the tissue without serious damage. In attempting such a task it is well to bear in mind the fact that in the high-lights the gelatine-film is thin and far more tender than the shadows, where the coating is much thicker. To use the cotton, a tuft of it should be saturated in warm water and may then be drawn lightly over the surface of the print, which is kept under water meantime. No matter how far development may have proceeded in warm water, the cotton will be seen to remove still more of the pigment and gelatine.

PRINTING FROM THIN NEGATIVES

WHEN more contrast is desired in printing on P. O. P., it can be secured by printing slowly in a diffused light. If the light is strong it will be an additional help to lay a piece of green glass over the printing-frame. This method may require an entire day for printing one copy, but the results are worth the effort if one fears to risk damage to the negative during intensification.

DRYING POST-CARDS

So many readers of PHOTO-ERA have complained that they find it difficult to keep glossy post-cards flat that we suggest a satisfactory remedy. Place the cards to dry between two strips of wood about four and one-half inches apart, so that they will be sprung into a low arch, and it will be found that they will dry almost flat and will remain so.

VIGNETTING LANDSCAPES

WE are all so prone to look for painters' pictorial conceptions in nature, instead of learning directly from nature! Photographers are the ever-ready slaves to the conventionalities of art, and the square mount with its rigid edges is their especial delight. But not content with this bondage, they impose upon themselves additional servitude: lantern-slides must be constrained to fit the regulation size mat, notwithstanding the injury to the beauty of the scene. We are, however, glad to see a break from this last obeisance to the mechanical demands of the lantern operator, whose only aim is perfect dissolving.

If photographers only knew the charm given to a landscape by vignetting, we are sure the method would be more practised. The value of vignetting in portraiture needs no demonstration, and one sees numerous examples of high-grade work either by use of the vignetting-mask or by the skilful employment of brush development.

Any one of taste and discernment must acknowledge that often a well-chosen view loses much of its charm because of the hard, rigid lines of its surroundings. The vision comes to a sudden, and therefore unpleasant, stop when it reaches these barriers. How much more pleasant to allow the eye to wander off indefinitely, just as it does in the unconfined scene in nature! It is only because we are so accustomed to see the photograph set round by lines and angles of the ground-glass screen of the camera, and because, too, we think art so directs, that we take for granted that the parallelogram is the correct thing to chain up our conceptions of composition. Not only does vignetting landscapes add much to their aesthetic value, but it may sometimes be employed to improve an indifferent picture.

Sometimes unavoidable straight lines crop out prominently in a scene near the margins of the picture, such as lines of buildings, unsightly fences, etc. All such objectionable features can be kept from trespass by means of the vignetting-device.

There is not much skill demanded in making a good vignetted picture, but even if the process were the most difficult it would more than repay by the beauty secured. We may not have said much in the above remarks, except in recommending vignetting to landscapes, but if some one follows up the suggestion we shall have accomplished some good.—*Journal of the Photographic Society of Philadelphia.*

MAXIMS ABOUT MOUNTING AND FRAMING

PICTURES small in size or of delicate tones are, as a rule, improved by suitable mounts, but large pictures, especially those of a strong and decided character, are better framed close up.

According to the delicacy or strength of the subject and treatment, so the frame should be correspondingly light or heavy.

A small picture should have a relatively larger mount, but it should be borne in mind that a small picture on a large mount will dwarf the

apparent size of the former. Absolutely white or black mounts should rarely be used.

A dark mount should be used for pictures of deep tone, in which it is desired to emphasize the high-lights.

A light mount is best for pictures of delicate tones, in which it is intended that prominence or force shall be given to the smaller proportion of darks.

Tones of medium tints are best employed to surround subjects in which it is required that prominence shall be given both to the high-lights and deep-darks.

As the purpose of a mount or frame is to isolate it from its surroundings, the color of the mount should not so closely approximate to that of the print as to blend with it in any part in an indistinguishable way.

It should be remembered that the glass of the frame, not being absolutely transparent, will slightly degrade in tone both mount and picture.

The color of the mount or frame should harmonize with the picture. This may be secured either by (1) a harmony of analogy (*i.e.*, a tone of the same or a similar color) or (2) a harmony of contrast in which the complementary color prevails.

Strong or crude colors should be avoided in mount and frame. Quiet or somber tones of gray, green or brown are generally appropriate.

If the frame has any carving or enrichment, the details should be emblematic of the subject, or be suggested by it, but they should not in any way be eccentric or so conspicuous as to attract undue attention. Such enrichment should diminish in prominence and importance as it approaches the frame.—*Alexander Keighley in The Practical Photographer.*

HINTS ABOUT STAND-DEVELOPMENT.

It is not well to keep the dilute solution used for stand-development in the tank day after day, as only a few developers will endure prolonged exposure to the air, especially when very dilute. It is much better to have a number of bottles which can be filled full of the solution at the end of each day's work, and tightly corked. If care is taken that the bottles are full and tightly corked, dilute developers which are suited to stand work such as glycin or rodinal will keep reasonably well.

The developer in the tank should be stirred with a glass rod before immersing any plates in it, for, if it has remained motionless for any considerable length of time, it is stronger at the bottom than at the surface and a negative of uneven density will result. To avoid air-bubbles, it is necessary to use great care in submerging the plates to be developed. After they have been dusted with a camel's-hair brush, slide them quickly but steadily down into the solution.

Stand-developed negatives usually lose more in the fixing-bath than those developed by the ordinary method, and should, therefore, be developed a little denser than normal — until detail is visible all over the glass side of a single-coated plate is usually a good guide.

NOTES AND NEWS

Announcements and Reports of Club and Association Meetings,
Exhibitions and Conventions are solicited for publication

THE CONVENTION OF THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA

THE above event will occur at Dayton, O., August 6, 7, 8 and 9—about two weeks after the appearance of the current issue of the PHOTO-ERA magazine. The date and place have been known to every professional worker in this country for some time; the details, however, not until recently. Every one knew that the management of the affair was in able hands, and it is a foregone conclusion that the officers of the Association, with Clarence J. Van Deventer as president, Frank W. Medlar as secretary and Frank R. Barrows as treasurer, will keep their word and make this year's convention a record-breaker in the best sense of the term. The manufacturers and dealers will be on hand, as usual, with the latest and best photographic apparatus and accessories of every kind. There will be artistic and technical demonstrations of a high order and, as the leading educational feature, a lecture by Prof. Otto Walter Beck, art-instructor at Pratt's Institute and the author of "Art Principles in Portrait-Photography," which notable work was reviewed in PHOTO-ERA of July. The Salon will be unusually interesting this year, the board having decided to select twenty-five salable portraits and award each of the successful makers a handsome Salon Certificate. All those still wishing to compete for this honor should lose no time and send their exhibits—three to six prints, framed or otherwise—*prepaid* to Chas. L. Lewis, P. A. of A., Dayton, O., and, at the same time, a request for the necessary space, to C. L. Lewis, 1217 Madison Ave., Toledo, O., not forgetting to join the Association, by applying for membership and enclosing \$5.00 (admission-fee, \$3.00; annual dues, \$2.00) to Frank R. Barrows, 1873 Dorchester Ave., Boston, Mass., as all these privileges are open only to members, and every professional in good standing is eligible.

If you cannot arrange to be present at this highly interesting national meet, you should, at least, try for one of the many prizes, which can be done by observing the instructions indicated.

PHOTOGRAPHERS' ASSOCIATION OF MISSOURI

THE thirteenth annual convention of this Association, held at Excelsior Springs, June 18, 19 and 20, was in every way a decided success, and reflects much credit upon the efforts and good judgment of the officers. An interesting program was provided, including music and a lecture, "Pictures and Money," by Felix Raymer. Great benefit was also derived from the continuous demonstrations in posing, lighting,

negative making and printing by representatives of the leading manufacturers.

PHOTOGRAPHERS' ASSOCIATION OF NEW ENGLAND

ADDITIONAL information regarding the yearly convention of the above-named body of professional photographers is at hand. Honorable J. W. Coler, Speaker of the House of Representatives, will deliver the address of welcome. Mr. S. M. Holman, of Attleboro, himself a prominent member of the State Legislature, will make the reply. Among the speakers on other subjects will be H. A. Collings, S. Lawrence, ex-Pres. Charles W. Hearn and A. Bement, the well-known art-critic. This list of experts is to be extended. Among the interesting features of the event will be the offer of ten prizes to be given by the American Aristotype Company, for the best work made on its paper. PHOTO-ERA hopes that as many amateurs as possible will make it a point to attend this convention, Mechanics Building, Boston, August 27, 28 and 29, as much of value is in store for them. Among the print-displays will be a collection of portraits by R. Duehrkoop and other German workers.

PROPOSED MONUMENT TO THE MEMORY OF THE LATE JAMES INGLIS

PIRIE MACDONALD, at the end of the year 1890, suggested to me that I should endeavor to get James Inglis to write a series of articles on lighting for the benefit of the professional photographers of this continent. I placed the matter before Mr. Inglis and he at once gladly assented, because he felt that it was the duty of every man in any profession to do the best he could to help those who were earning their living in it. A great many people never realize what they owe to the profession that has given them an opportunity to earn a living; but James Inglis realized this to the full, and he wrote his articles and presented them to the fraternity without price; nay, more: when he found they were creating considerable stir he, at his own expense, went to conventions and demonstrated his ideas.

James Inglis was undoubtedly the father of the great pictorial movement that influences the professional photographers of this country today, and this art movement is the grand old man's greatest monument, and he, were he alive, would care for no other recognition.

Pirie MacDonald and I were discussing this idea a few weeks ago, when he remarked that, though this was undoubtedly true, there was another side, and he felt that the photographers

of this country were under obligation to the memory of James Inglis, and that since it was at his suggestion the articles were written he felt it was the proper thing for him to make another, and it was this: that since I had been so closely associated with Mr. Inglis in the propaganda of artistic lighting, it was but fitting that I should take charge of a movement to erect a suitable memorial over his grave. He proposed that I give an opportunity for every professional photographer in this country who felt that he had been benefited by the teachings of Mr. Inglis to contribute the sum of \$1 toward a monument, and that no larger sum be accepted from anybody, and he forthwith placed in my hands the first contribution. I need scarcely say that I gladly undertook the duty thus offered me.

The first step was to secure the consent of Mrs. Inglis and the children, which I am glad to say was very willingly granted.

It is not intended either by Mr. MacDonald or myself that an elaborate monument should be erected, for we feel that a simple stone or tablet bearing a few well-chosen words will be sufficient. It will be the sentiment behind the act that will count, not the act itself. We consider that from one to two hundred dollars will be enough, and we invite prompt contributions of \$1 each.

All contributions should be forwarded to me at my home address, Box 82, Glencoe, Ill.

F. DUNDAS TODD.

NECROLOGY

IN the recent death of John A. Walker, Esq., vice-president and treasurer of the Joseph Dixon Crucible Company, this distinguished firm loses one who has contributed to the activity, success, and prosperity of one of the largest manufacturers of lead-pencils of the world. He was born in the city of New York in 1837, receiving his early education in the schools of Brooklyn, but chose to enter commercial life. After an excellent business-training in the city of New York, and after serving his country in the Civil War of the South, Mr. Walker, in 1867, became associated with the firm of Joseph Dixon and Company, of Jersey City.

In 1868, when Joseph Dixon and Company became incorporated as the Joseph Dixon Crucible Company, he was made secretary of that corporation, and began his life-work in making known to the world the then little-known uses of carbon, graphite, of which the Joseph Dixon Crucible Company have been the best-known and most widely known exponents.

Mr. Walker served the Dixon Company as secretary and largely as manager until 1891, when he was unanimously elected to the dual position of vice-president and treasurer, the latter office having been held by him for some time previous. He held these offices without interruption until his death, the general management of the company also being largely in his hands.

He was shrewd, energetic and liberal-minded, and greatly enjoyed a good joke and plenty of fun in its place. Nothing escaped his eye. He

had decided literary tastes and could put them to the test any day, either for business-purposes or for an ethical cause.

Untiring and persistent devotion to business, however, with increasing age and lack of needed rest and recreation, began to tell on his vigor and strength, and on April 24 he went home for what he and his intimates supposed would be a few days' rest. Complications set in, and a month later he was at rest forever.

FRAUDULENT PRIZE-COMPETITIONS

ENCOURAGED by the success attending the photographic prize-contests conducted by photographic journals and some of the monthly illustrated magazines, numerous publications of doubtful responsibility, as well as individuals without means or reputation, are actively trying to obtain photographic prints in a similar way. These indiscriminate attempts to deprive innocent and unwary camerists of the choicest fruits of their labors, in return for money-prizes which, though attractively advertised, are never intended to be awarded, are methods which may safely be termed criminal. It is obtaining goods under false pretenses. The sooner this practice is stopped, the better.

It is the duty of every publisher of a respectable publication to not only refuse each and every advertisement of a prize-offer which is not honestly conducted, or which emanates from parties that have no standing in the business-world, but to expose the frauds in the columns of his paper. Several advertisements of this character have been received by the publisher of PHOTO-ERA, but were promptly turned down. Among them was one quite plausible in appearance and very alluring from the pecuniary view-point. It came from a real-estate firm in Michigan.

Fortunately, the worker who desires to participate in a competition creditable in every way will not need to look far. *The Youth's Companion*, with commendable energy, discernment and liberality, announces in the pages of the current issue of PHOTO-ERA the plans of its twelfth annual prize-competition. A feature of the regular annual convention of the Photographers' Association of New England, at Boston, August 27 to 29, is a solid gold medal in the Grand Portrait-Class, open to the workers of the world. Among the photographic magazines—we blush to state the fact—is PHOTO-ERA, with the popular monthly contest of the Round Robin Guild and its own yearly competition, advertised elsewhere in this issue.

LAW AGAINST SNAP-SHOTS IN GERMANY

THE snap-shot photographer in Germany is threatened with extinction after July 1, owing to the great risk he will run of being mulcted in heavy fines under the act which goes into force on that date. The right of all persons to the exclusive reproduction of their own portraits or those of their houses or belongings is made absolute by the new enactment.

\$1,500 IN CASH PRIZES

A NOVEL PHOTOGRAPHIC ADVERTISING-CONTEST THAT IS OPEN ONLY TO THE PROFESSIONAL

WE make the first prize in our Photographic Advertising-Contest \$1,000 because we want to prove to the world that there are men who can furnish us with photographs that are better, from an advertising standpoint, than anything that can be drawn.

Photography is already taking an important part in advertising. Every issue of the great magazines shows how the advertiser is making use of photography in exploiting his wares. But there are undeveloped possibilities. In advertising there is work for both the portrait photographer and the commercial photographer. The man who has a patent churn turns to the commercial photographer for a picture of that churn, but in developing his business he is likely to turn sooner or later to the portrait photographer for a picture of an attractive girl operating that churn. For the professional photographers who can combine good, clean photographic work with an advertising-idea there is good business at their own price.

For the double purpose of demonstrating the possibilities of photography in advertising and at the same time securing for ourselves a series of superior pictures to be used in our Kodak advertising, we are offering Fifteen Hundred Dollars in cash under very simple conditions.

The work will, we believe, prove interesting to every lover of the art and is likely to prove profitable by leading up to a new and as yet uncultivated field. Besides, the prizes are worth while.

TERMS

1. Each picture is to contain a figure or figures and is to be suitable for use as an illustration in advertising the Kodak or the Kodak system of amateur photography.
2. Each entry to consist of three pictures 8 x 10 or larger.
3. *Prints only* are to be sent for competition — not negatives.
4. Prints must be mounted but not framed. (Mounts should show about one-inch margin.)
5. No competitor will be awarded more than one prize. (This does not prevent a competitor from entering as many pictures, in sets of three, as he may desire.)
6. Due and reasonable care will be taken of all non-winning prints and, barring loss or accident, they will be returned to their owners at our expense, but we assume no responsibility of loss or damage.
7. The negatives from which all prize-winning prints are made are to become the property of the Eastman Kodak Co., and are to be received by it in good order before payment of prize-money is made.
8. Contestants who are awarded prizes must also furnish to us the written consent of the subject) in the case of a minor, the written consent of a parent or guardian) to the use of the pictures in such manner as we may see fit in our advertising.

9. All entries should be addressed to EASTMAN KODAK Co., Advertising Department, Rochester, N. Y.

10. In sending pictures, mark the package plainly, "Photo-Advertising Contest," and in the lower left-hand corner write your own name and address. Then write a letter as follows:

I am sending you to-day by ^{express} ~~mail~~ charges prepaid, prints. Please enter in your Photo-Advertising Competition.

Yours truly.

11. The name and address of the competitor must be legibly written on a paper and enclosed in a sealed envelope in the same package in which the prints are forwarded. There is to be no writing on prints or mounts.

12. We will promptly acknowledge the receipt of pictures, and when awards are made will send each competitor a list of prize-winners.

13. Only recognized professional photographers conducting a studio will be allowed to compete.

14. This contest will close Nov. 1, 1907.

PRIZES

First prize	\$1,000.00
Second prize	500.00

THE JURY OF AWARD

As photographic excellence and advertising value are both features of importance, it has been our endeavor to secure, as judges, men who are recognized as among the leaders in their respective lines. In this we have been fortunate, and we are pleased to be able to announce that the following-named gentlemen have consented to act: Mr. Geo. H. Hazen, Mr. Pirie MacDonald, Col. Theodore C. Marceau, Mr. Henry D. Wilson, Mr. E. W. Spaulding.

To the photographers of America Colonel Marceau and Mr. MacDonald need no introduction. In the business end of the publishing world the other gentlemen are likewise well known. Mr. Spaulding is advertising director of *The Ladies' Home Journal* and *The Saturday Evening Post*, Mr. Wilson directs the advertising end of *The Cosmopolitan*, Mr. Hazen of *The Century*. All of them are ripe in experience — progressive. They are just the kind of men to weigh accurately the advertising value of an idea.

SUGGESTIONS

The jury will be instructed to award the prizes to those contestants whose pictures, all things considered, are best adapted to use in Kodak advertising.

As reproductions of the pictures will often be in small size, too much detail should not be introduced.

Pictures for reproduction should be snappy — vigorous, for they lose much by the half-tone process.

Where apparatus is introduced, it should be up-to-date. If you have n't the goods, you can borrow. There may be possibilities in introducing the Kodak Tank Developer idea.

A girl? If she is attractive, refined, by all means, yes — unless you think you can better impress the judges in some other way.

It is highly probable that we shall want to secure some negatives aside from the prize-winners. In such cases special arrangements will be made.

EASTMAN KODAK CO.,
Rochester, N. Y.

MRS. W. W. PEARCE'S CAMERA

THE great popularity enjoyed by child-life photography is attested by the fact that many inquiries have been received regarding the character of apparatus used by Mrs. W. W. Pearce, the well-known expert in that delightful branch of photography. From personal knowledge we are able to state that she uses a 5 x 7 Tourist Graflex, fitted with a Cooke Anastigmat lens.

NECROLOGY

OTTOMAR ANSCHÜTZ

MAY 30, 1907, another member of the old guard of photographers has passed away — a man who has contributed very materially to the general recognition and standing of the art. The name of Ottomar Anschütz is intimately associated with the development of modern photography; and even if, in the course of the rapid advance of scientific and artistic photography, one may lose sight of his epoch-making, high-speed photographs, Anschütz was classed, until his death, among the best-known workers of Germany. What distinguished his achievements particularly is the fact that his photographs preserve their individual character in spite of their pronounced pictorial effect. His pictures were the first which were accorded a fully-merited place, side by side with paintings, in a public art-exhibition, and the applause which he received on that occasion, in the year 1890, in the Society of Artists of Berlin, was justly regarded not only as an important success for himself, but for photography as well. Wherever the progress of photography is mentioned, whether in scientific circles, among manufacturers, or professional or amateur workers — everywhere the name of the deceased will be referred to with respect, for he certainly has rendered valuable service in the interest of photography.

AMERICAN FEDERATION OF PHOTOGRAPHIC SOCIETIES

THE summer season is upon us, and little news can be gleaned from the various photographic societies, with the exception of the large professional bodies, which hold their annual conventions about this time. Most of the photographic clubs hold no regular meetings during July and August.

Reports from the various clubs indicate that the total attendance at the Third American Photographic Salon was greater than that of the first or second.

The current Salon closes this month [July] in Pittsburg, but the prospects of a very large at-

tendance are not encouraging, on account of the fact that the Salon comes rather late this year, and at a time when many of the people interested are out of town.

It is the cause of sincere regret that the Third Salon was not exhibited in any of the Eastern cities. All of the officers are back at their desks and hard at work on the Fourth Salon, the prospects for the success of which are extremely bright. The officers and various clubs are working in harmony, and only excellent results from their efforts are anticipated.

Among the most recent accessions to the Federation are the Wisconsin Camera Club of Milwaukee and the Indianapolis Camera Club, both of which are alive and active, a circumstance that has been noted in the pages of PHOTO-ERA more than once. It is almost certain that one or two Eastern cities will exhibit at the Fourth Salon, as several are in communication with the Federation officers on the subject.

A significant fact in connection with Federation matters is that the Middle West is the most active of all sections at the present time, and the clubs there are strong and loyal.

Announcements and entry-blanks for the Fourth Salon were sent out more than two months ago, and still requests for the same are daily coming in, not only from every portion of the United States and Canada, but from all parts of the civilized world. This great and unexpected demand for information has necessitated the printing of an extra supply. Clubs and individual workers can obtain entry-blanks and other information connected with the Salon from the secretary, W. E. Strayer, 1120 Wood St., Wilkesburg, Penn.

THE NATIONAL ACADEMY

ALTHOUGH the fate of the formation of a National Academy of Photographers does not altogether depend upon the action that may be taken at the National Convention — taking place at Dayton, O., August 6-8, the time PHOTO-ERA goes to press — it is to be borne in mind that the movement includes, besides professional practitioners, workers ordinarily termed semi-professionals, men and women who have gained legitimate renown in portraiture, genre and pictorial work. This class of workers is not in evidence at the meetings of the regular professionals, but, for reasons of convenience or modesty, call it what you will, is disposed to affiliate with the various organizations composed chiefly of amateurs. *The Photographer* of June 18 has the correct view of the Academy idea, maintaining that American photographers are not yet ready for the scheme.

BOOK REVIEW

HANDBOOK OF AMERICAN INDIANS, NORTH OF MEXICO. Edited by Frederick Webb Hodge. Bulletin 30, Part One, A-M. Bureau of American Ethnology, W. H. Holmes, Chief, Smithsonian Institution, Washington, D. C.

This comprehensive and reliable work on the

subject of the American Indians, which has been in preparation for a number of years, has made its appearance. It is not too much to say that it is a monument to modern scientific and historical research, and reflects all possible credit on the mind that grasped the import and extent of the subject and guided it to completion. The handbook, necessarily voluminous, contains a descriptive list of the stocks, confederacies, tribes, tribal divisions and settlements north of Mexico, accompanied with the various names by which these have been known, together with biographies of Indians of note, sketches of their history, archaeology, manners, arts, customs and institutions, and the aboriginal words incorporated into the English language — all arranged alphabetically.

It will be readily seen that every one interested in the history of the noble Red Man will turn to this volume, and the one succeeding, with a feeling that as a source of information, at once accurate and authoritative, this work, carried on by competent men under the auspices of the United States Government, is certainly without a peer.

GAMES OF THE NORTH AMERICAN INDIANS

THE twenty-fourth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, at Washington, D. C., by W. H. Holmes, chief, is devoted to an extended memoir on the games of the American Indians, by Stewart Culin.

Any one familiar with the character of the Indian — a knowledge gained from personal contact with numbers of the race or from the perusal of the imperishable works of James Fenimore Cooper, and, perhaps, extended by an examination of the photographic character-studies by E. S. Curtis — will be slow to associate with the grave and solemn bearing of the American aborigines a sportive disposition. The snake-dance and the ghost-dance are but purely religious ceremonies; the element of merriment does not enter into them. But the American Indian is fond of diversion and entertainment; his thoughts are not always centered upon sanguinary conflicts, raids and hold-ups. The work of Mr. Culin, therefore, is not only a comprehensive and carefully prepared demonstration of the Indian's fondness for sports and games, but a revelation of their extent, variety and interest. Mr. Culin divides the games of the American Indians into two general classes, games of chance and games of dexterity. Games of pure skill and calculation, such as chess, are entirely absent. There is no evidence that any of the games described in this work were introduced into America at any time before or after the Conquest. On the other hand, they appear to be the direct and natural outgrowth of aboriginal institutions in America. Playing-cards and, probably, the simple board-game — called by the English "Nine Men's Morris" — are among the few

games borrowed by the Indians from the whites. It is to the American Indian that we are indebted for lacrosse, racket and shuttlecock.

The work of Mr. Culin is the result of accurate and conscientious observation and scientific research, and forms a priceless addition to the records that are being accumulated relative to the history of a dying race. There are over eleven hundred illustrations, many of them taken from original photographs.

THE AUTOMOBILIST ABROAD. By Francis Mil-toun. Numerous illustrations by Blanche McManus. 8vo, cloth, gilt top, price, \$3.00 net. L. C. Page & Company, Boston.

This handsome and timely volume, written from the viewpoint of the automobilist, will be received with enthusiasm by the great army of devotees of the most popular of sports. The conventional European guides are notoriously unreliable and unsatisfactory, and the "autoist," planning a tour abroad, will find this new, silent guide a sure and practical aid. The author treats the subjects of the automobile proper, travel, hotels, roads and routes, regulations, together with other important matter, with admirable clearness and authority. All necessary information and data pertaining to the comfort and safety of the "autoist" *en tour* are clearly set forth. The large road-map of France, Belgium and the Rhine, complete and up-to-date, is a valuable feature of the book. The descriptions of tours along the highways of England, Scotland, France, Holland, Belgium and along the Rhine — disclosing views and scenes unfamiliar to the ordinary tourist — are full of interest, amusing and instructive, and bear the stamp of the observant and experienced traveler. Mr. Mil-toun's volume appeals irresistibly to every person fond of foreign travel, and, if he have not an automobile — well, he will be anxious to get one. He can, at least, hope to see a part of Europe in a touring-car, either in his own machine or as a member of a touring-party.

AMERICAN ANNUAL OF PHOTOGRAPHY

TENNANT & WARD, of New York, advise us that they have taken over the publication of the well-known *American Annual of Photography* from its former owners and are now busy with the preparation of the 1908 volume, which will be edited by John A. Tennant. Good as the "Annual" has been in past years, the new owners desire to make the 1908 issue better than ever — more useful in its information and more attractive in its illustrations. In this they ask the coöperation of all photographers in the shape of articles dealing with photographic experiences or pictorial work of unusual interest. Correspondence or contributions for the "Annual" should be addressed to the editor of *The American Annual of Photography*, Tennant & Ward, 287 Fourth Ave., New York. As the book is made up during the summer months, contributors are urged to send their articles or pictures with as little delay as possible.

PHOTO - ERA

The American Journal of Photography

Vol. XIX

SEPTEMBER, 1907

No. 3

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WILFRED A. FRENCH, Ph.D., Editor

PHIL M. RILEY, Associate Editor

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J. H. TARRELL
THE CAPITOL BY NIGHT
THIRD AMERICAN PHOTOGRAPHIC SALON



PHOTO - ERA

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ISAAC HARRIS

THE BREAKERS

Illustrative Photography

C. H. CLAUDY

THE general opinion of the average society of photographers seems to be that it is composed of artists, near-artists and others not quite so near. If there exists a photographic organization among amateurs not "devoted to the advancement of pictorial photography," they have kept the fact pretty quiet.

After you have all tired of howling "iconoclast," "sour grapes" and "photographic reactionary" at me, I should like to say — which will probably get me in very bad order indeed with all the pictorial fraternity — that if some other-world power were to suddenly sweep every single photograph which intends to be, or is, a picture off the face of the earth, mundane affairs would go on about the same; but if the same power attempted to remove photography from the sciences, and from commercial life, it would find it had a job on its hands, and its success would result in a complete reorganization of many phases of life.

The facts of the matter are — no matter what one would like to have them — that the pictorial side of photography is its least important side. That it is the pleasantest and, in pure enjoyment, the most profitable to follow is probably the reason why it is the main end and aim of nine out of ten club-members and a great many amateurs not connected. There is inborn in all of us the desire to create. A few have the gift: they draw, model, play the piano, sing, design, build, construct. Others have not the ability but have the longing. The camera offers a means to the creation of — well, of creations (sic!). It provides all necessary technic of drawing, and produces results in monotone which, to be equaled by any hand-process, would take years of practice and then some, and finally would n't be equaled after all! So, of course, we all use the camera and “create” to our hearts' content; and after a year or so, when we understand some of the principles of photography, and can make fairly decent negatives and prints, we join a society, see exhibitions, read the magazines, attend two art-lectures, read one art-book, and behold! we are artists! Overdrawn? Perhaps; but I know a lot of fellows whose work is hung and praised and they are no more artists than I am!

Listen: I, even I, herewith set down as a scoffer, have had pictures on the walls of good exhibits; I, even I, have heard artists rave over one or two of my efforts and point out the one to the other how I had “handled” this and “placed” that, and how I had “controlled” the light and “subdued” the detail, and a whole lot more that was as manna to a hungry man in the desert or a bunch of stale bread to a hobo out of a job, although, all the time, I knew the artists were making fools of the two of us. For never a bit had I controlled or subdued or arranged or otherwise done things strange and terrible to my picture — I thought it pretty, photographed it where it looked prettiest to me, made a print and sent it in! I hit it; that was all. Arguing in my favor, you may say, as one good pictorialist friend did say, that it was my “instinctive artist knowledge born within me which enabled me to select and get the effect I wanted!”

It may be. For all I know, I am an unheralded Milton, a Whistler in disguise, a Beethoven whom no one ever heard play, a male Jenny Lind. But if the truth were to be told, I would say that I took this picture because I thought it was pretty, having no mortal idea of the various things I was credited with doing; and no more have nine out of ten of the rest of the camerists who pose as pictorialists. Please do not misunderstand me. There are certain earnest men and women who study art, who strive with all their might and main to make the camera a pliant tool to render outwardly the art that is in them. They have my utter respect and admiration, the same I grant to any earnest student of any art. But for the rest of you — or the rest of us — who use a camera Saturday afternoons and Sunday mornings, who have landscapes by the ten thousand and presentable pictures by the twos and threes, who now and then strike it just right and pose on the strength of those lucky hits as artists, we are neither the one thing nor the other; and did we devote our talents to something we could understand without a lifetime of study, we would put our time to better use.

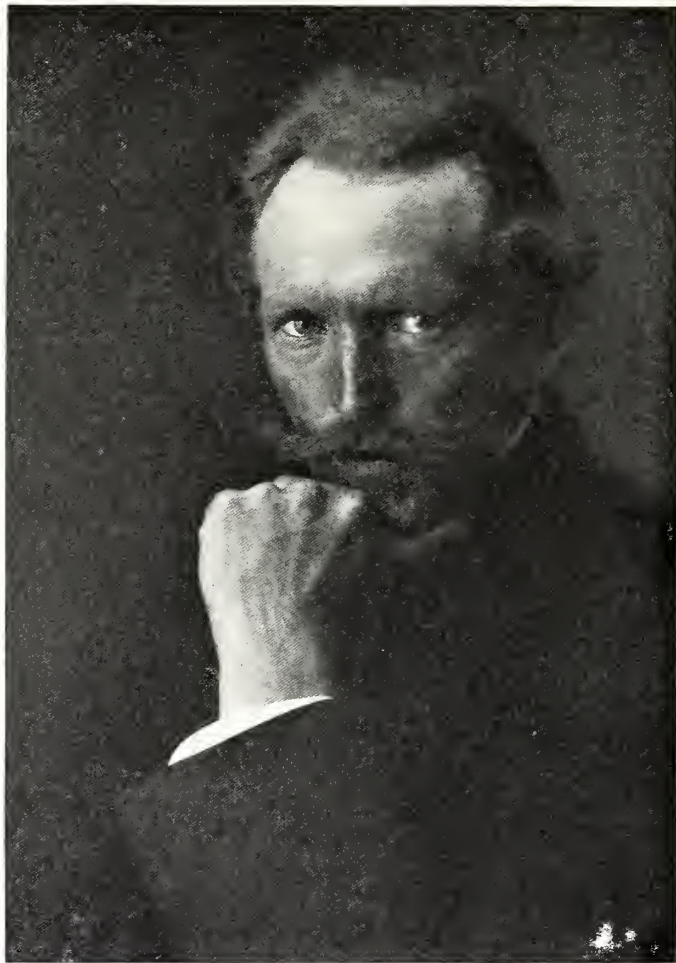
Art takes a lifetime. Have you any use for the stage-struck girl with half a voice who studies without intelligence and can "sing" nothing but arias, and in Italian at that? Have you any use for the would-be pianist whose attainments stop at two "pieces" and a few pyrotechnics? Do you admire the work of the girl who "sketches a little" or "paints bits" and calls the result "art," with a big A? The girl with a voice who sings popular songs and goes no further than she can go with understanding; the pianist who knows his limitations and plays dance-music, rag-time and light opera for himself and his friends, pretending to be nothing that he is not; the girl who does needlework and burns things in wood and laughs if you ask her why she does n't study painting — these are the ones who know their capabilities and their lack of capabilities, and, surely, they are more sane than the first group outlined above.

Now the camerist who does n't really study art, who knows a few elementary principles and makes "pictures" by the light of these willow rushes, whereas, with a good understanding of practical photography, he might make plain photographs with the light of the sun, is, to my mind, on a much lower plane than the despised record-of-fact man. The one tries to do something he cannot do — for lack of knowledge he is too lazy to acquire; the other does something he can fully understand, in the best possible way. I have the same respect for the record-of-fact man who does the best possible record-of-fact work, over the half-baked would-be pictorialist, that I have for a first-class maker of chairs, over my amateur friend who thinks he can carve in wood and — cannot!

I know two girls. One plays at the harp, one of the most difficult of instruments, and plays nothing but what she calls "music with a soul." The other plays the banjo, and plays it well — not like a professional with seemingly twenty fingers; but so she can sing to it, and so you want to dance to it. One knows her capabilities and does her best; the other, perhaps, does her best too, but she is blind to the possibilities of her own nature.

I found out my pictorial limitations some time ago, I am glad to say, and I compromised between the cold-wire-drawn efforts of the record-of-fact man and the beautiful, the truly beautiful, photographic pictures which are made by the people who have studied the art-side of it, and which I would be only too glad to make, if I could. It is n't that I have n't the photographic skill — for I can do most stunts with a camera — but that I have n't the education in art-lines. I know a man whom I can lick to a finish in any photographic competition — and I know more in a minute than he does in a week about the science of photography — but he makes pictures whenever he wants to; he can find them without looking for them. Incidentally, he is an architect. He has studied one of the most noble of the arts for years.

Well, I compromised. When I make a photograph nowadays — that is, unless it is a special try at a portrait or something similar in scope — I try first to make it a good photograph and, secondly, to make it illustrative. And I believe it is a very good compromise between the "would-make-pictures-if-I-could-but-can't" and the "could-make-records-if-I-wanted-to-but-don't" attitudes. As



L. O. GRIENSWALDT

CONCENTRATION

such, I recommend it to all of you who are not artists, who have not the time or the inclination to study to become artists, and who are continually doing your inefficient best to make a picture you do not know how to make, or what's wrong with it when an artist condemns it!

Nor am I posing as a master in the art of illustrative photography, either! But I know what an illustrative photograph ought to be, in most cases, and when I fail it is more often through force of circumstances than through lack of knowledge why; so you will understand that an illustrative photograph is not so particularly hard to learn how to make.

But when I am confronted with the task of telling you just what illustrative photography is, and know you will not be satisfied if I say that it is photography

THIRD
AMERICAN
PHOTOGRAPHIC
SALON



B. F. LANGLAND A MISTY DAY IN THE MOUNTAINS

that illustrates, and some one whispers, *sotto voce*, "What you can clearly conceive you can clearly express," I feel like the dog with the can tied to his tail—he wants to put it between his legs and cannot, and he wants to run and is afraid, and he wants to get rid of the incubus and does not know how. So he yelps!

To say that illustrative photography is photography which illustrates is begging the question. Yet that is a true statement. Illustrative photographs, in contradistinction to those which are not illustrative, are photographs which show something besides the mere objects of which they are pictures. For instance, a picture of a phonograph is a photograph, pure and simple. Three pictures of three phonographs are three photographs, pure and simple. But three pictures of three phonographs, in one of which a man speaks into the tube, in another a man listens to the horn and in the third a man cuts from the cylinder the record just made, are all illustrative photographs, inasmuch as they suggest all and show much of the operations connected with the running of a phonograph.

An illustrative photograph tells a story, in which particular it partakes of the nature of the *genre*, and all pictorialists will agree that pictorial photography is as hard as *genre* photography. But it is possible to tell a story in an illustrative photograph, or a set of them, without the photographs either having life in them or being in the least pictorial. Successive views of the big Baltimore or San Francisco fires were highly illustrative and told a big story, yet a full set may well have contained not a single human figure.

An illustrative photograph is interesting for what it shows, not for its pictorial excellence. If it can be illustrative and pictorial too, it is of course so much the better photograph. But if it can be but the one or the other, and it is illustrative first, it will hold attention longer and catch it quicker than the mere picture, unless it is something very superior indeed in the picture line, in which case it does not belong in an album or portfolio, but on the wall.

I once went to some trouble to make the following experiment. I procured from photographers whose pictorial work is considered excellent, of a good standard although not the highest, a set of pet prints. I put these in an album, and sandwiched between them various photographs of a purely illustrative character and having no pictorial beauty whatever. These were all made by various photographers whose work is entirely illustrative and never for pictorial effect. When that album is shown it is invariably the pictures which get the praise and the admiration, but it is also invariable that the illustrative photographs are looked at the longest and most commented on; and when I am asked for copies of the pictures in the album, it is usually for copies of the illustrative photographs!

Illustrative photography is a field which lies close at the door of every one, regardless of where he lives. It is possible to obtain a collection of illustrative photographs anywhere which will catch and hold interest, be instructive and even commercially valuable. It is a field that any one can enter with a moderate amount of study, and is free to those particularly who, through lack of innate ability or education, are unable to become pictorialists of any rank. Its practice teaches the eye to see and the mind to act quickly, its results have permanent value, and its proportion of successes, which cannot be marred by so little a thing as will utterly spoil a true picture, are much greater than in pictorial work.

It seems to me, who have been able to grasp my own limitations and had sufficient common sense to admit them to myself, that there are many photographers trying to make pictures to rival the artists with the amount of light an artist would require for a sketch only; men and women trying to produce pictorial results without any true foundation to build on, who would do well to throw up the game at once, except in occasional instances, and devote their time to making photographs of an illustrative character. They would thus have an end they could encompass with the time at their disposal, would not be constantly outclassed with the efforts of men whom, by reason of natural gift or long study, they cannot hope to equal, and would be producing results which would be of value to themselves and of value to those who esteem pictures for their intrinsic interest, rather than for their conformation to the rules of art.

The Witchery of the Sea

WILLIAM FINDLAY

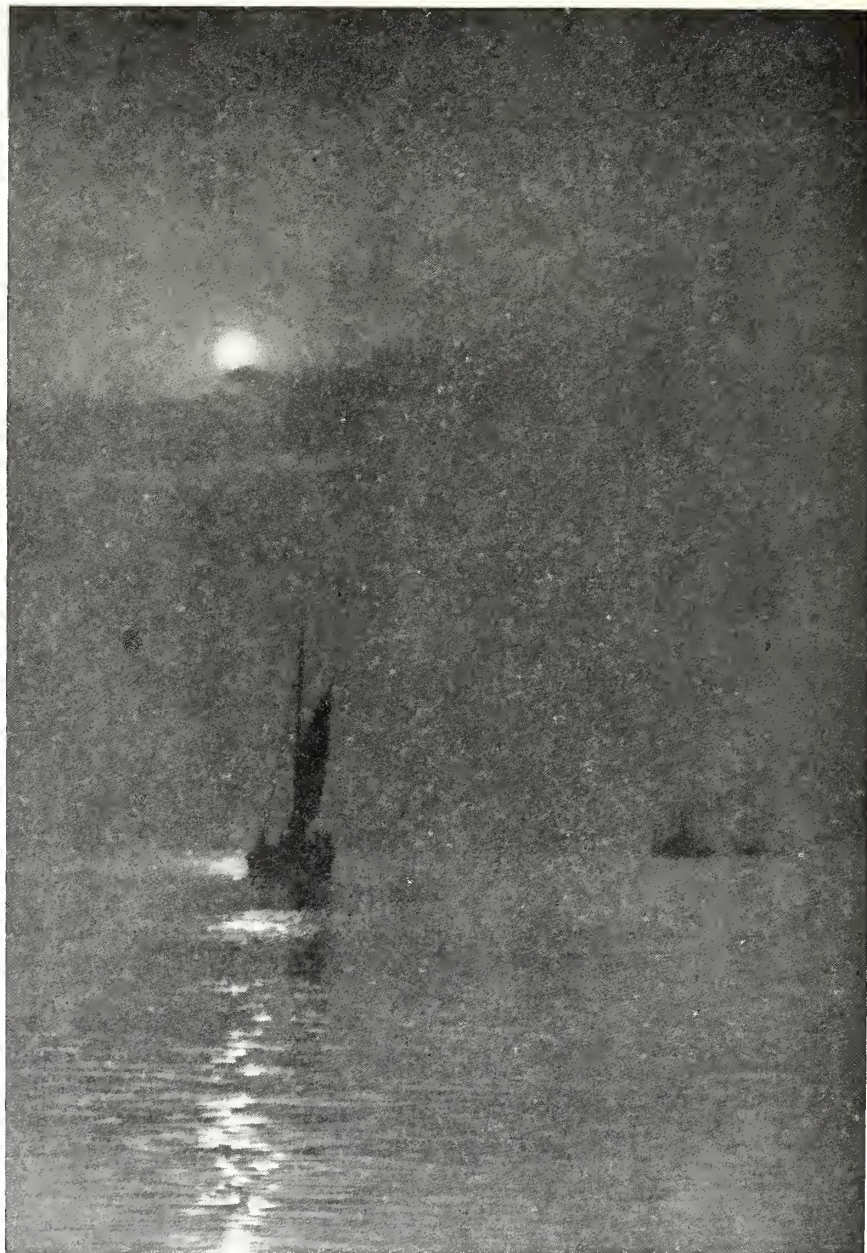
WHEN one first comes into possession of a camera and falls a victim to the most virulent disease, "photographic fever," plates are profusely used on all subjects. The beauty-spots in the immediate vicinity are soon overdone; friends and pets are requisitioned as models, with varying success; and very soon many of those who started out on their photographic careers with high hopes find themselves in the position of Alexander the Great, with no more worlds to conquer. Happily, however, others find, after the "preliminary canter," that it is best to specialize. There lies latent in almost every breast artistic feeling. It may run to flowers, trees, books; the running brooks or the witchery of the sea may captivate one. But whatever it is, all else should be put in the background and every plate used in furtherance of the specialty selected. Thus only can an assured success be attained.

Personally, I have been bewitched by the sea; and, although occasionally circumstances compel me to make excursions to other domains, I cannot put the same "heart" into the subject as is claimed by the sea-pictures. And what scope there is, too! What variety of moods! So illimitable a subject!

Residing, as I do, on the east coast of Scotland, there cannot be secured the soft twilight-effects so dear to the heart of the dweller in the west, and to get the best effects one has to be abroad in the early morning. Fortune has favored me in this respect, and from April till September my first glance on leaving work in the morning is towards the east. Should the sky look promising, a hurried walk is made homewards, the camera shouldered, the bicycle mounted and a speedy run made to the pierhead! Many a morning the clouds have dispersed before the point is reached, and then there is very little use of waiting; for, having to photograph against the sun, uninteresting pictures result unless the orb is obscured by clouds. Still, such a morning can by no means be wasted if attention is directed to shipping-studies, and wonderful reflections are to be had.

At other times there are no clouds about at all, but a soft haze spreads itself over the ocean, and the rays of the sun are considerably retarded. This is an ideal morning, and under such conditions "Reminiscent of a Dutch Painting" was secured. Again there is a lovely setting for a picture — beautiful clouds, with the sun just breaking through, and a responsive water-effect. But fortune does not always smile upon you by sending along some craft at the psychological moment to put "life" into the photograph, and without this one may keep the plate unexposed. It saves labor, expense and worry.

Occasionally the fates are kind, however, and "Nature's fleeting masterpieces" pass before your gaze in rapid succession. A favoring wind may send some haddock-boats home in ample time for the market, and if the wind has a touch of the east in it they come sailing up the channel in fine style and afford ample opportunity for a nice discrimination. I have exposed eight plates on



WILLIAM FINDLAY
REMINISCENT OF A DUTCH PAINTING





WILLIAM FINDLAY

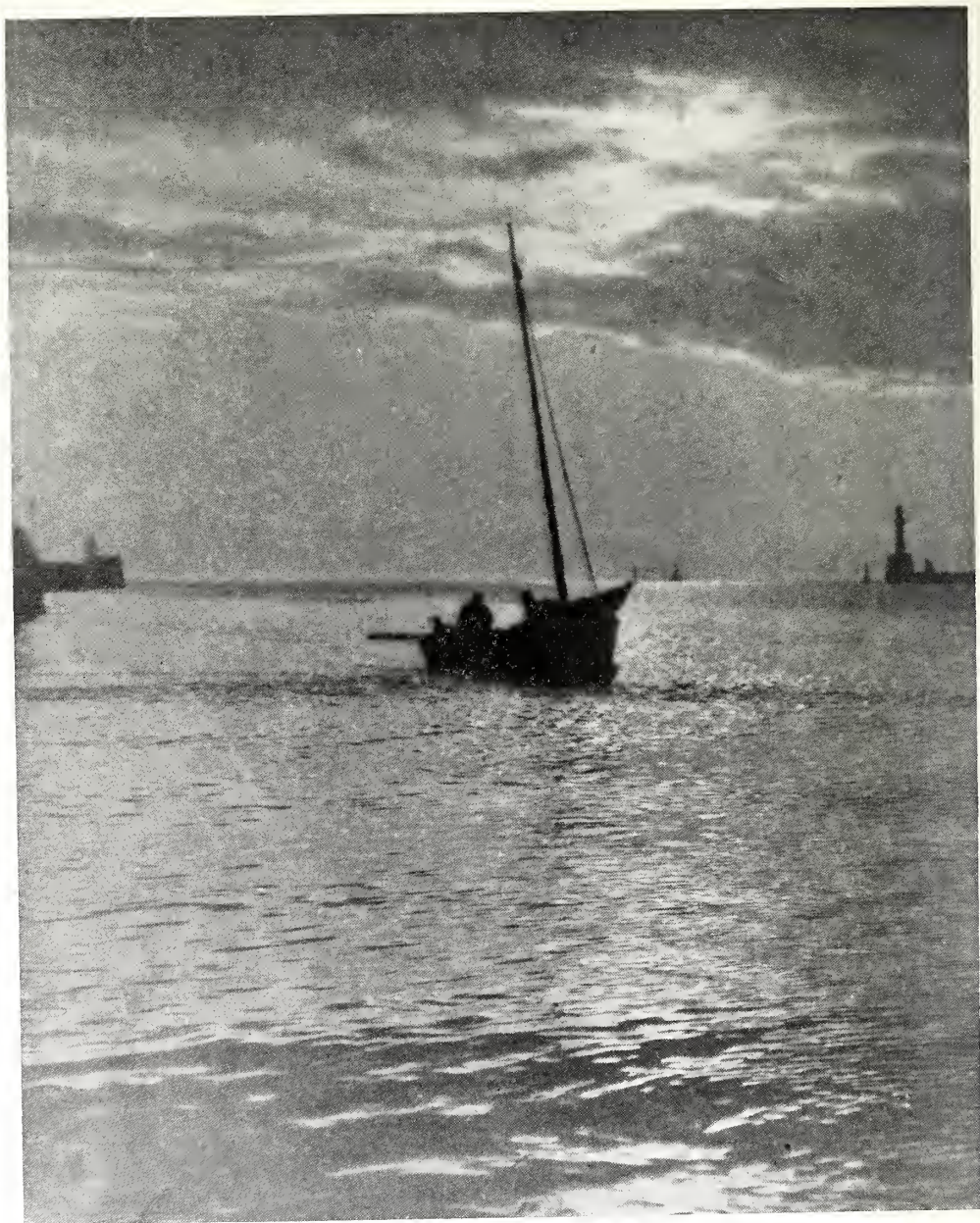
A MOONLIGHT-EFFECT

such a morning. I think at least a couple would suffice nowadays. When a contrary wind blows it is still possible to get pictures of sail-boats, and very often when the wind is westerly the cloud-effects are best. It is possible to catch a fishing-boat being towed in by the mast-head, as in "A Head-Wind." The fishermen tack for the North Pier, and when they reach it, a portion of the crew clamber up the steps, and, by a rope attached to the boat's mast, tow it to its berth. In such a case it is best to wait until the boat is close upon you before making the exposure. I did not discover the pictorial possibilities of this combination of circumstances until quite recently.

Another variation is to get the salmon-fishers returning from an examination of their nets along the coast — and such a picture may in process of time become rare.

A motor-boat has appeared on the scene this year, and still more are to follow. I have included this "innovation" in one of my pictures this year, but I prefer the old-fashioned "coble" when "the brown sails fade from sight."

I find this a most interesting specialty, and I trust what I have said may prove helpful to some inlander on a holiday by the seashore, and even to a dweller in a city by the sea, who knows that she is smiling and surly in turn, but has not courted her sufficiently to become acquainted with her various intermediate moods — and they are many.



WILLIAM FINDLAY
A HEAD-WIND



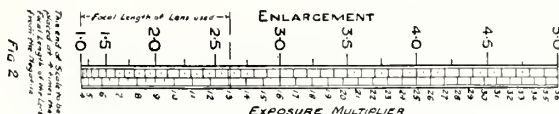
Exposure in Enlargement

F. H. JEFFREE

WHILE in negative-making the factors governing exposure are well understood, and most exposures are calculated from the known data, in enlarging it is generally considered impossible to arrive at the correct exposure except by a series of trials on slips of bromide paper — a method which wastes much time, and does not tend to the production of uniform results. Yet both problems are essentially similar, and the latter may be solved as readily as the former if we can only rightly gauge the density of our negative, which corresponds to “character of subject” in negative-making, and the effective aperture at which the lens works under the conditions of enlargement.

No	Negative	Denary (D)	Binary (E)	Hexidec (H.E.)	Remarks
1	Power source	1	2 05	13	Standard Negative
2	Motor Gp	1½	2 55	14	
3	Graphic on porch	1½	2 15	15	
•		•	4 35	43	
4	The Mall	8	2 0	72	

FIG. 1



This is the crux of the whole matter, and some writers have expressed the opinion that the intensity of illumination is not in this case governed by the law of inverse squares, and that therefore it is not possible to solve the problem except by the usual trial-and-error method. The law is, however, of universal application; and when correctly understood and applied, no more difficulty will be experienced in computing the exposure for enlargement than is met with in the more usual problem of negative-taking.

The rule is, gauge the intensity of the light falling on the negative by means of an actinometer, and calculate the exposure as in negative-taking (multiplying by a suitable subject number to represent the density of the negative), and then *multiply the exposure so found by the square of the linear enlargement plus one*. Thus if we wished to enlarge a quarter-plate negative to 12 x 10 in., or, to speak more accurately, to enlarge a part 4 x 3 in. to 12 x 9 in., i. e., a linear enlargement of 3, we multiply the exposure as ordinarily found by $(3 + 1)^2 = 4 \times 4 = 16$.

There remains the question of density of negative. An unstained negative of just sufficient density to give a plucky print on P. O. P. will be our standard, and in negative-taking would correspond to an ordinary landscape without dark



WM. S. RICE

A SUBMISSIVE TRIMMING

objects in the foreground, or a subject number of 1. Such a negative will take about sixty times as long to produce the print spoken of below as the paper in Watkins' exposure-meter does to attain standard density; i. e., one minute for every second. Having settled on the standard, any other negative may be compared with it by making a contact-print of the two negatives at the same time, and noting the time each takes to produce a harmonious print; i. e., *not* the time to produce a print suitable for toning and fixing, in which, as printed, the shadows are all blocked up, but that which *looks* right as printed and not fixed — a proof, in fact. Thus if the standard negative took ten minutes, and that from which we wish to enlarge took twenty-five, the density would be reckoned $2\frac{1}{2}$. A note-book as shown in Fig. 1 is useful, as we can have the particulars entered and worked out beforehand, in readiness for the opportunity to enlarge.

If a set of standard conditions is determined on, however, the procedure may be simplified even more. The writer always uses F. 16 for enlarging, and usually works on Barnet P.M. bromide paper, which has a speed No. 40 (Watkins). Using Watkins' meter, it will be found that with the above conditions the necessary exposure is determined by taking the actinometer time and multiplying it by one-tenth of the multiplier given in the fifth column, Fig. 1.

The manipulation of the enlarging-apparatus may also be simplified if a scale such as is shown in Fig. 2 be attached to the baseboard. The figure is ac-

curately drawn to scale, and may be enlarged to suit a lens of any focus by noting that the total length of the scale is just three and one fifth times the focal length of the lens used. The end of the scale marked 1.0 is to be placed at four times the focal length of the lens from the position of the negative. Having settled on the desired amount of enlargement, we place the carrier for the bromide paper directly over the number, and manipulate the lens only until we obtain sharp focus, when we shall find that the image is of the required size, thereby saving the tedious trial-and-error process usually necessary to obtain the correct position. With the scale has been incorporated the corresponding exposure multiplier numbers $(E + 1)^2$, thereby saving even this simple calculation.

It will be found a great aid to rapid centering of the enlargement if lines enclosing the portion to be enlarged are ruled on the negative in India ink; or a black paper mask may be employed for the same purpose.

With the aid of the devices mentioned, and one or two others to enable rapid changes of negatives to be made, the writer has had no difficulty in making a dozen enlargements from a dozen different negatives in the course of an afternoon; the exposures being made in rotation, without a single trial, and all developed in a batch, subsequently all proving entirely satisfactory.

For those interested in the mathematics of the foregoing the result is arrived at as follows. We commence with the well-known formula:

$$\frac{1}{F} = \frac{1}{f_1} + \frac{1}{f_2}$$

where F = the principal focus of lens, f the distance from lens to negative, and f_2 the distance from lens to bromide paper.

Remembering that the size of the image is proportional to the distance from lens, we get that

$$f_1 : f_2 :: 1 : E,$$

where E = the linear enlargement.

$$\text{Then } f_1 = \frac{f_2}{E}$$

Substituting this value of f_1 in our first formula, it becomes

$$\frac{1}{F} = \frac{E}{f_2} + \frac{1}{f_2}$$

On solving we get that $f_2 = F (E + 1)$; i. e., that the working-focus has been increased in the ratio $E + 1$.

Applying now the law of inverse squares, we get that the working-intensity of the lens is diminished in the ratio $\frac{1}{(E + 1)^2}$ as given above.

Since $f_1 : f_2 :: 1 : E$,

$$f_1 = \frac{f_2}{E} = \frac{F (E + 1)}{E}$$

and the total distance from the negative to bromide paper (ignoring a small correction for the separation of the nodes of admission and emission)

$$= f_1 + f_2 = \frac{F(E+1)}{E} + F(E+1) = \frac{F(E+1)^2}{E}.$$

This is the basis on which the distance scale has been constructed.

Finally, the method of calculating the exposure by Watkins' actinometer is based on the formula that

$$\text{The exposure} = \frac{D. A. S.}{4 P}$$

where D = U. S. No. of diaphragm; A = time taken by actinometer paper to attain standard tint; S = subject No. (ordinary view = 1); P = plate (or paper) speed.

For enlarging, this has to be multiplied by $(E+1)^2$. Calling this the multiplier M, we get that

$$\text{The exposure} = \frac{M.D.A.S.}{4 P}$$

Adopting F. 16 (U. S. No. 16) as D, and a plate speed $P=40$, we get

$$\text{The exposure} = \frac{M \times 16 \times A \times S}{4 \times 40} = \frac{M.A.S.}{10}$$

Now $S \times M = D \times (E+1)^2$ (Fig. 1), so we arrive at the result that using F. 16 and a paper with a speed of 40, the exposure is equal to the actinometer time multiplied by the number in the fifth column of our note-book, and divided by ten. An equally simple relation will be found to hold with other papers, stops and makes of actinometer.—*The Amateur Photographer, London.*



F. S. ANDRUS

A BED OF CHRYSANTHEMUMS

J. K. PETERSON

THIRD AMERICAN PHOTOGRAPHIC SALON

THE WAVE





H. A. ROBERTS

PORTLAND CAMERA CLUB

EARLY MORNING

How To Make and Use a Duplicator

JOHN BOYD

THE making of any unusual picture is regarded with so much wonder by the uninitiated that we of the inner circle are apt to feel that the producer gets altogether too much credit for his work. This may or may not be so merited, but at any rate the production of these double, freak or spirit pictures is sufficiently interesting to be better understood than it is. The means by which they are made consist of such simple contrivances that it is strange we do not see more of them used.

Of course the results are not high art, and may never win a medal or obtain a diploma; but they will nevertheless earn the commendation of your friends, and may even contribute to the making up of a successful story, as I shall hereafter point out.

Very good "double" pictures can be made with the aid of the disc device, which is nothing more than a metal lens-cap, with part of the circular front cut away, and which are obtainable in a neat form for a few cents at any stock-

house. These, of course, confine the worker to a pair of exposures on the same plate, yet many amusing as well as useful combinations are possible.

The secret of success with this or any of the succeeding devices is to blend or vignette the two exposures into each other in such a way as to conceal the place where they come together. This the segment article will not always do, as it is purchased; but it is easily made right, if large enough to permit of adjustment.

The first thing to do is to divide the ground-glass of the camera into four equal parts by drawing a line across its center when placed horizontally, and another intersecting this, when set up for perpendicular views. This will give a dividing-line to work by — a guide for future operations.

Next put the duplicator over the front of the lens, and note how much image shows on the ground-glass. If it gives more than what covers half of the plate it is useless, and should be returned, if possible, to the maker or dealer. If this cannot be done, cement or glue a piece of stiff, black cardboard or heavy paper over the disc, allowing it to extend over the segment one-eighth of an inch. Now see how it works. Suppose it does not permit the image to come up to the center line. Then it will have to be pared down gradually, until the dark side of the ground-glass extends up to within a quarter of an inch of the line. Now turn it around, so that the image is shown on the opposite side of the focusing-screen, being careful to see that both sides bring the two images together in the same way at the center line. One will likely have now noticed the necessity for care in making this preliminary test. One will have seen the gradual blending of the fully-lighted view, which first began about three-eighths of an inch from the center line, and gradually lessened until the image disappeared altogether about the same distance beyond the center. This blending is the crucial point; it either makes or mars the resulting negative.

It is absolutely necessary when adjusting the duplicator on the front of the lens to get the straight edge of the segment perfectly perpendicular or horizontal, according to the way one is composing the shape of the picture. Failing in this, one will have a portion of the negative unexposed. This is one of the things that this simple device leaves to the care of the operator, and on his skill in setting it depends the future of his composition.

I purpose now describing an improved duplicator, which was devised by myself many years ago, and which is here presented in print for the first time. It is made of cardboard, is light and compact, and serves its purpose completely. The back is of heavy card, with a round opening corresponding to the size of the lens. A collar of cardboard fitting around the latter is attached to the back, and is for the purpose of facilitating application. A and B are slides running in a groove, and C is a permanent center which divides the image into two parts, the light reaching the lens and ground-glass alternately, through the small sections on either side. To use the device, we apply it to the lens, first closing the slide A, so that it covers the opening to the left of C. This, of course, shuts off the light from the opposite side of the ground-glass! The subject is arranged, and the exposure made. We then close slide B, so that it covers the opening to the right of



J. R. PETERSON

PORTLAND CAMERA CLUB

WAVE ACTION

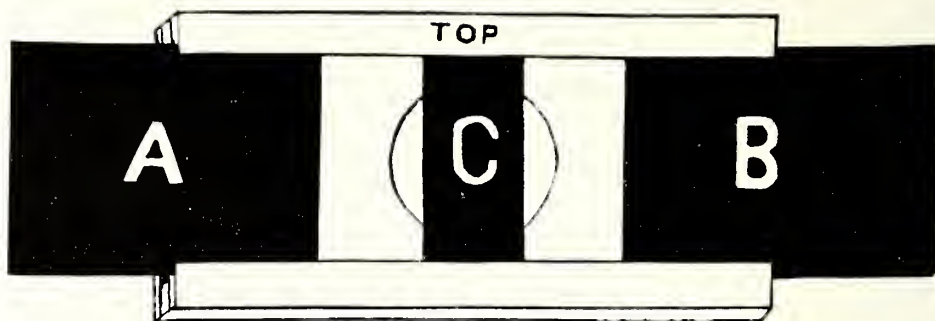


DIAGRAM OF DUPLICATOR

the center, at the same time opening slide A. This puts the balance of the view on the opposite side of the screen. We transfer the subject to this side, and expose as before. The great utility of this device is that the openings are formed by the straight lines of C, no matter how the duplicator is attached to the lens. We can thus place our subjects in any position, feeling sure that when the two exposures are made the entire plate will be covered, and without a center dividing-line. As all duplicating-devices cut off a great amount of light, it is better that, after the subject is placed, we remove the attachment and examine the focusing. This ensures sharper definition than with the attachment in place.

Regarding the exposure: we must use the lens without inserting a stop, the device acting as a diaphragm whose value is about $f.32$. This means, of course, that with it in place you give the same exposure as if stopping the lens to $f.32$.

Now let us look about us for subjects. They will naturally suggest themselves to the enthusiastic camerist; but in order to set his "think-box" a-going, let me name a few. Man boxing with himself; man wheeling himself in a barrow; man up a tree throwing down apples to himself; gentleman introducing lady friend to herself; man fighting a duel with himself with seconds looking on, etc., etc. We could go on and on, and fill pages, but what's the use? The world is full of subjects, and the ubiquitous amateur may be depended on to find them.

We may also put this device to more practical uses, and gain for ourselves grateful thanks, and not a few dollars. A few of my own experiences will illustrate this more fully.

Two chums had been out fishing. They had not had an opportunity to be together for years, and were anxious to have a picture of themselves with whatever catch they made. Luck was against them that day, and only a few fish were caught, but they wanted a picture with even these few. This was their story, and, while it appealed to my sporting-blood — for I had gone through the same experience — it brought to mind my photographic skill with the duplicator.

I therefore selected a suitable location for the view, got one of the subjects lying down with the entire catch spread out before him — but not without a remonstrance from both, for one felt that he was getting more than his share; the

other, that he did not have any. I said, "All right; now don't worry; we'll have this thing right in a minute." I then exposed on number one, and replaced the slide. I next rearranged the fish over in front of number two, and made that section of the picture. The result was such a surprise to the fishermen that they seemed to never get over telling how that "durned fellow with the camera made them catch sixteen fish that day, when 'b'gosh' they had only eight between 'em."

A few years ago I came similarly to the rescue of a party of deer-hunters who had had a streak of bad luck. There were nine men in the party, and they had only five deer to show for their two weeks' hunting. They did n't mind the small bag, but they rather rebelled against posing in front of such a slim result. I



THE MAGIC OF THE DUPLICATOR

listened to their tale of woe, and outlined my plans, which would "increase" the number of deer. They had doubts about it proving satisfactory, but would remember me gratefully if it turned out all right. I first directed a tree to be cut down, of sufficient length to string ten deer upon. This done, I had the five deer strung nicely along one-half of it, taking care not to overrun the center. In front of these I placed five of the hunters, exposed the plate, then slid the deer along to the other side of the pole, and placed the remaining four men in front of them. The exposure was then completed, and, as planned, it was an entire success. Of course, I was cautioned not to give the deal away, and I do so now only without mentioning names or place, and for the benefit of the photographic fraternity.

On another occasion a commercial traveler and his wife wanted a negative made of themselves together. He had to catch a train in a short time, and she, womanlike, had to dress up for the occasion. Before the latter was accomplished



S. S. SKOLFIELD

PORTLAND CAMERA CLUB

WINTER

it was time for the gentleman to leave for his train. The camera being in position, the duplicator was slipped on, the man's image recorded, and when my lady arrived she was similarly pictured. In this way the two got their photographs, made an hour apart, and without the necessity of both of them being there together.

This little device was also the means of restoring friendship between two men who had quarreled, and whom we will here call "A" and "B." Many efforts had been made to reconcile them by their friends, but without success. Then it was arranged to invite them the same day to a picnic, each going there without the knowledge of the other, in the hope that it might be possible to bring them together and restore the good feeling. It was there I learned of the affair from the peacemaker, whom I shall call "C." I suggested that a photograph be taken of the two shaking hands. At this "C" shook his head; he said it was next to impossible — they would never do it. Outlining briefly what I meant, and what I thought could be accomplished, he said he would arrange to give it a trial.

"A" was first brought along in front of the camera, his arm extended to grasp that of "C," a smile of greeting beaming over his face. Back of him were several other acquaintances, which I thought wise to introduce in order to assist the reconciliation, if such were possible. The exposure for half the plate was



G. E. FOGG

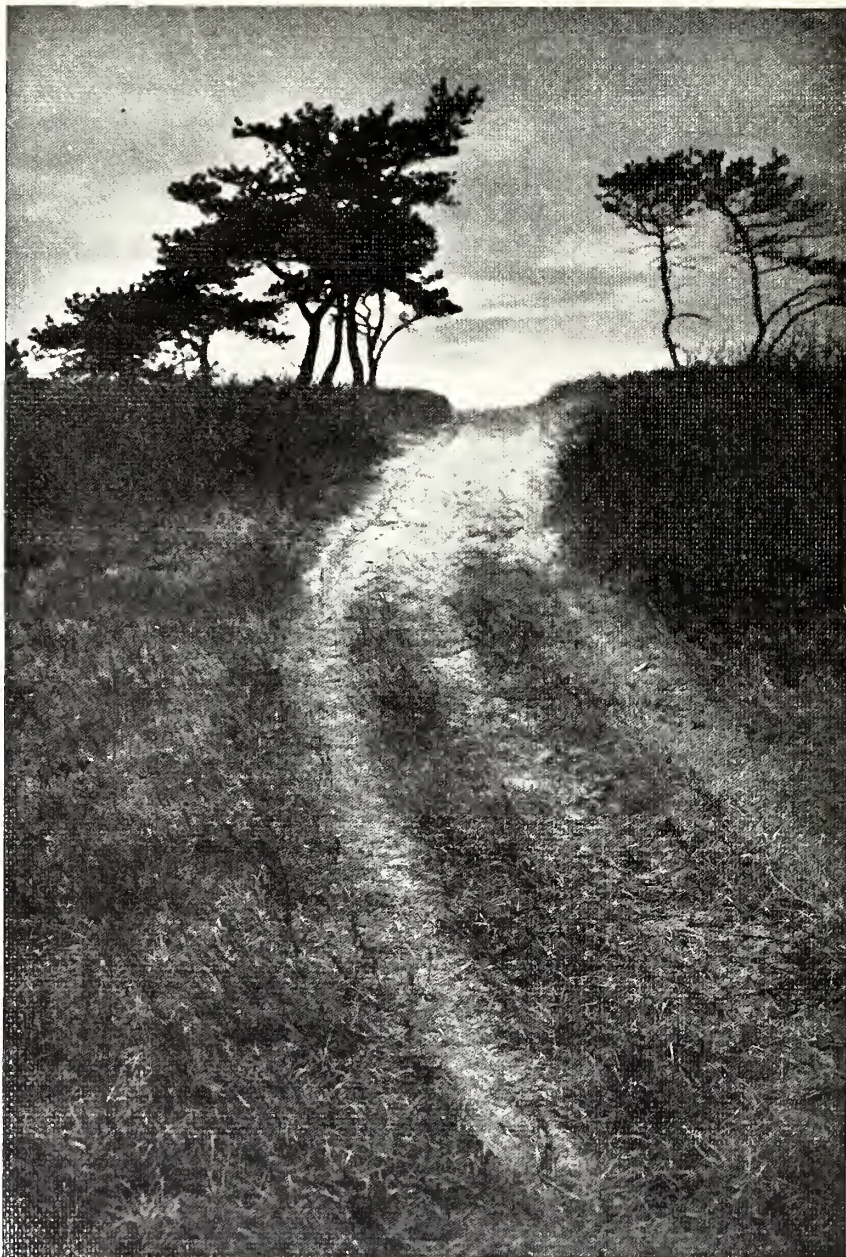
PORTLAND CAMERA CLUB

LATE AFTERNOON, WINTER

then made. Then "B" was sent for, "A" being taken away from the vicinity by some of his friends. For this part of the picture, "B" took the place formerly occupied by "C," while "C" stood in the step-marks first occupied by "A." The same arrangements prevailed in this part as in the other, except that I brought in a new set of friends as a background for "B."

The result showed the two with arms extended, a hearty smile on the face of each, and a pleased group looking on. When the finished prints were presented to the principals, accompanied, as they were, with the friendly counsels of the peacemaker, they agreed to let the past be forgotten, and to resume their friendship. Thus it was that the freak, toy, or whatever one may call it, came to be the reconciler of a quarrel, performing its offices without any ostentatious display, but bringing the result about in a quiet manner.

These are evidences where the duplicator fills in a niche, and a good substantial one at that; so don't despise the little instrument, or regard it as a toy, or even as the perpetrator of impossible things, for one can employ it in accomplishing much more than do many of those who now use it, but fail to think of its further advantages.



J. R. PETERSON
CREST OF THE HILL
PORTLAND CAMERA CLUB



A Rapid Action Printing-Frame, and Its Possibilities

O. H. TODD AND O. VON ENGELN

WE two were planning to get out from three to five hundred developed post-cards in one afternoon, in order to put them on sale on the very day of the occurrence which they were to illustrate. Rapid methods were being discussed. The negatives could be dried rapidly by giving them a soaking in alcohol after washing. Printing by daylight would require only a few seconds for each card. The printer could drop each card from the printing-frame in to the developing-solution, and the second man could then take care of its development and fixation. After washing, rapid drying could be effected by placing the cards face down on muslin stretched over a frame, set up with one end a foot higher than the other, a lamp at the lower end, the chimney of which, being two or three feet below the under surface of the cloth, would supply a current of heated air, which would then flow from the lower to the upper end of the frame. Add a draught from an open window to carry away the water-vapor from the drying cards, and one had the best conditions for this operation. A small percentage of glycerine in the last washing-water would ensure the prints drying flat.

On reviewing the operations it appeared that the ones which would consume the most time were, first, making the negative ready for printing (masking, etc.), and, second, adjusting the paper to the negative and fastening in the back of the frame.

The latter was the worst. Have you ever stopped to think that the printing-frame we use is nothing more than a relic of the days of printing-out paper, when one had to open half of the frame to see how far the printing had gone — an antique among the photographer's tools that has not kept up with the progress in other lines? Consider; one must dexterously place the paper over the negative with one hand, and with the other fit in half of the hinged back, then release one's hold on the paper, and spring in first one half, and then the other half of the back. Of course the printer becomes deft with practice and does all this mechanically, yet it consumes a disproportionate amount of time when printing, and, moreover, is tiring.

Obviously, here was a chance for improvement. We exclaimed simultaneously, "Why not devise a frame which will open like a book?" Then started inventive scheming to utilize this idea. It remained, however, for the premier author of this article, who is the mechanical genius, to evolve the frame we used. And while he was about it, he made it to cover a multitude of sins.

How often have you been annoyed by these little troubles: the picture was on the negative crooked, and the paper had to be adjusted carefully to it each time, or else the print carefully trimmed to eliminate the "leaning tower of Pisa"

effect from the vertical lines of the buildings, or to prevent all the water of a lake running off the scene? Or the trouble of holding a film negative in place while printing, solved crudely by sticking it fast at the edges to a clear glass plate? Or the trouble of getting a print from a certain portion of a plate larger than the size of paper used? With this frame all these troubles cease. Simply adjust the negative (if a film, lay it on a clear glass plate as usual), with reference to the opening in the front, so that it will appear as you wish it, and then spring it fast, and, presto! it is in place for any number of prints, each exactly like the rest. Of course, if your negative is crooked you must sacrifice part of it in making your prints square; on the other hand, if the negative is correct, just as much of it can be utilized with this frame as with the old-fashioned type.

There remains the point of rapid loading and unloading. This is accomplished with one movement. One hand holds the frame while the other pushes the paper into the opening, and then snaps the spring over the pin. At first blush it may seem difficult to unclamp this spring quickly; but if one places the thumb at its angle, and presses down, and, at the same time, presses out with the forefinger placed on the edge of the spring where it engages the pin, it works very smoothly. To clamp it, a simple downward pressure with the thumb at the angle is all that is necessary.

The description below will enable any one to make the frame, or have it made by a local cabinet-maker. We have no patent on it; we offer it freely to the photographic community as a time-saver, reserving only the right to exhibit it at the photographers' convention at Dayton, O., in August, in competition for the prize offered for the best new device shown.

Figure 1 shows the frame open ready to receive the negative. All necessary dimensions are shown for a frame to print post-cards from a 5 x 7 negative. The method of making the joints is plainly shown in the cut. This makes a strong construction for thin strips. The wood should be well seasoned, whitewood, basswood or other soft wood, as the soft woods are not so liable to warp as the hard woods. The thin one-half inch wide strip is about one-sixteenth inch thick, and is glued and tacked on after the main frame is finished. The reason for doing it in this way is that it is easier thus to get a plane surface on which to rest the negative, and then put on the strip, than to make the whole from one solid piece. The parts of the frame which come in contact with the film side of the negative are covered with black felt, to avoid scratching the film, and to make up for any slight inequalities of the surface. This shows in the cut.

The springs are made from hard sheet-brass about one thirty-second of an inch thick. The combination hinge-springs at the back of the frame are made by bending the hard brass into the shape shown, and soldering to a small brass hinge. The two hinge-springs on the back of the post-card clamp should each be one-half the width of the catch-spring in order to have equal pressure all over the card.

From the dimensions given it will be seen that the space inside of the strip is large enough to permit any part of the negative to be brought over the open-

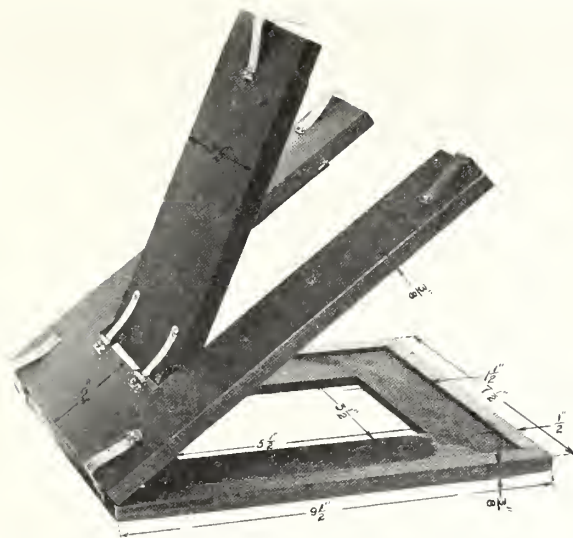


Fig. 1

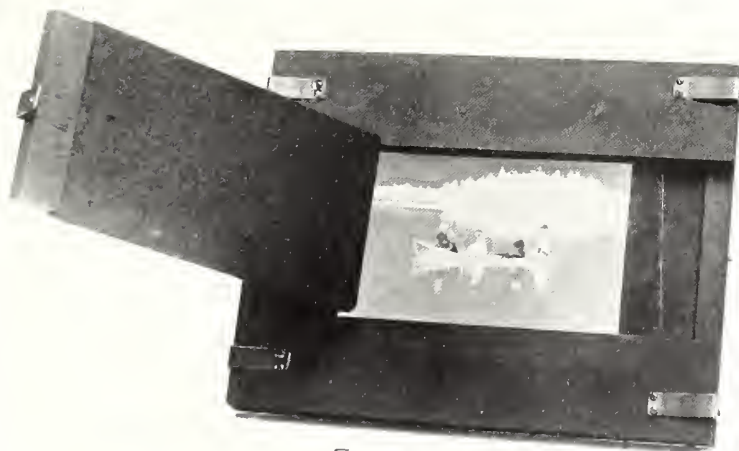


Fig 2.

A RAPID ACTION PRINTING-FRAME



ing. This frame will also work equally well with 4 x 5 negatives, by using a mask to cover the part of the opening not covered by the negative.

Figure 2 shows the frame with the negative in position. Note the fact that, although the edge of the negative is not parallel with the edge of the frame, the water-line of the view shown is horizontal. The negative, once placed in position, is held absolutely rigid, and thus all prints are printed from the desired part of the negative without losing time in placing the paper or card in the right position each time.

As stated at the beginning of this article, we used this frame for making a large number of post-cards in a very short time. With it we were able to print four cards per minute (each card requiring an exposure of from seven to eight seconds), which was as rapidly as the second man could put them through the developer and fixing-bath. With more rapid exposures, and not stopping to develop, this speed was tripled. The progressive photographer will readily see the possibilities for profit in this. For example, a flashlight of a banquet of a large convention (why not even the photographers' convention!), or a snap-shot of a parade, printed on post-cards and offered for sale before the event was over, at ten cents each, would sell like the proverbial hot cakes. If you are strong on calculating costs and profits, look this over: cards at about two dollars per gross, more or less, according to whose you buy, or one and one-half cents each, developer and labor cost one-fourth cent each, commission to salesman or stores two cents each; a total cost of not more than four cents each, or a net profit of six cents on each card.

Using this frame puts the photographer also in a position to handle large commercial orders (calling for thousands of prints from one negative in some cases) very rapidly and cheaply. In fact, its advantage is apparent in any case where a number of prints from one negative is wanted.

Criticism in Circulating-Albums

B. F. LANGLAND

THE prime factor in the advance made in pictorial photography has been, and will be, the desire to excel. The amateur working alone along pictorial lines sooner or later realizes that he can make no further progress, and that he is handicapped by being obliged to work without help. He has no standard by which to measure his work, and feels that he must know whether he is in advance or behind his fellow-workers. It is to fill this want that exhibitions are held, and that associations are formed for the purpose of circulating albums to contain the best work of members.

For purposes of comparison these albums are of great value, as is anything that serves as an incentive to bring out the best there is in us, and these circulating-albums do in a measure serve this purpose. But when, in addition to this



WILLIAM SHEWELL ELLIS
SUSAN B. ANTHONY





E. E. CHENEY

THE GATHERING STORM

opportunity to compare work, members are invited to criticize the efforts submitted, their value is questionable. Not that a photograph should not be criticized, or that it is either above or below criticism, but that the great majority of amateur photographers are lacking in knowledge of even the first rudiments of art, and, when they attempt to criticize, they are as apt to praise that which is bad, and to find fault with that which is good, as they are to do the contrary.

Criticism, to be of any value, must be founded on a correct conception of art-principles. What good can it do any one to know that Smith thinks this picture good, or that one bad, if he does not know, at the same time, that Smith's opinion is founded on correct knowledge of what an artistic picture should be?

In looking over the criticisms in circulating-albums one finds many of them written by persons who apparently have acquired a smattering knowledge of art phrases, and who apply their stock phrases to the picture criticized without



ANNA C. RAY

MAIDENHOOD

any true knowledge of their meaning. Indiscriminate criticism of this nature is destructive in its tendency. It is too often an attempt of the blind to lead the blind. As Ruskin says in speaking of children learning to draw, "The danger is that they will learn to like the wrong things unless carefully instructed, and their taste and style gradually formed and developed, and restrained if seen going in the wrong direction."

If the earnest amateur, anxious to improve in his work, pays serious attention to many of the criticisms appearing in these circulating-albums, he is in danger of learning to like the wrong things.

The true aim of criticism is constructive and it cannot be this unless it comes from a source that can be relied upon — from a critic whose criticism is founded on knowledge.

Photography and the X-Rays

MALCOLM DEAN MILLER, M.D., AND F. J. GARBELL

WHEN Professor Roentgen in 1895 discovered that a Crookes vacuum-tube produces invisible actinic light capable of affecting the photographic plate, the medical world realized at once that a very practical weapon in the fight against disease had been placed at its disposal. Thousands of physicians took up the study of the new agent, and, as its wonderful properties became known, the public press exploited it as a cure for many diseases. As in the case of radium, many of the claims made for the X-rays have been proved ill-founded, but eleven years' experience has reared a structure of solid facts of the greatest value to humanity.

Like many another great discovery, that of the X-rays was accidental. A loaded plate-holder happened to be left in the laboratory with some metallic object resting on the slide. When the plates were developed, a shadow of the object was brought out. Investigation proved that certain substances possess the power of screening out the visible light from the tube and allowing only the X-rays to pass, the action being comparable to that of the yellow ray-filters so well known to photographers. From these substances are made fluorescent screens, by means of which one may see the bones of the hand in beautiful detail. The whole art of X-ray photography, or radiography, depends on the fact that substances of different density are unequally pervious to the rays, the muscles and skin allowing them to pass unimpeded, whereas bone, steel, lead, bismuth salts and many other bodies offer great or complete resistance and therefore cast shadows. An X-ray photograph has been defined as "a record of density, produced by the Roentgen rays, and made in accord with the laws of projection" (Dr. Hickey). No lens nor camera is used, the plate simply being encased in daylight-proof envelopes, and the part of the body to be taken placed in contact with it between the tube and the sensitive surface.

"To-day the X-rays occupy a most important field in surgery. The treatment of fractures has been revolutionized by their use, so that no surgeon considers that he has used all the diagnostic methods at his command until he has studied the X-ray plate. Formerly many rare and obscure fractures, dislocations and simulated conditions could not be diagnosticated, but the X-ray plate makes the diagnosis easy and certain" (Dr. Mihran K. Kassabian). Take, for instance, a splintering of a small bone, which may occur without loss of function, abnormal mobility, dislocation or any other classic sign of fracture; or the separation of the epiphysis (the growing part of the extremity of a long bone); or a dislocation. The only difficulty in such a case would arise from incorrect interpretation of the facts recorded on the plate; since the picture is not a photograph in the ordinary sense, and one has to guard against erroneous impressions of perspective. In fact, the art of interpreting the plate requires long experience, and many eminent operators depend largely on others to guard them against mistakes.

Another great field of the rays is in the treatment of skin diseases. They have been used too universally and recklessly here, and some unfortunates have found to their cost that they are capable of very destructive burning of the healthy tissues; yet when intelligently used they give very beneficial results. Such diseases as chronic eczema, psoriasis, tuberculosis of the skin, many diseases caused by vegetable parasites and certain "new growths," as keloid tumors



F. J. GARRELL

BULLET IN KNEE

Large Dark Shadow is the Knee-pan

and skin cancer, are greatly improved or cured by X-ray treatment. Only an expert, however, should attempt their use. In general, morbid tissues are destroyed or their growth checked by the rays. In disease of the blood-forming organs, the bone-marrow, spleen and lymphatic tissues in general, very remarkable cures have resulted from raying the bones and the enlarged spleen. The more superficial the disease the more readily the rays exercise a curative action. Many cases require a combination of surgery and X-ray treatment.

Recently Professor W. B. Cannon, of Harvard, has contributed some very important facts to the surgery of the stomach and intestines. The normal actions of these organs have been investigated in cats by feeding them with meat



F. J. GARBELL
FRACTURE OF THE LOWER TIBIA AND FIBULA
PINS IN DRESSING SHOWN



mixed with salts of bismuth, by means of which the passage of the food is studied with the fluorescent screen. Working with Dr. John Babst Blake, Dr. Cannon compared the results of the various operations on the stomach, and showed the great superiority of one of them in nearly restoring normal function.

Space forbids too extended a reference to the manifold uses of the X-ray, yet I feel that this review would be inadequate without reference to the work of Dr.



F. J. GARBELL

NEEDLE IN WEB OF THUMB

F. H. Williams, of Boston. It is now well understood that consumption (pulmonary tuberculosis) is essentially a curable disease when taken in hand at an early stage. Dr. Williams has shown that the X-rays give exceedingly valuable facts in the study of the chest and lungs, and has been able to make earlier diagnosis by combining the facts thus obtained with the other data available.

With this incomplete glance at the present status of the Roentgen rays, let us now take up the photographic side of the subject more fully. Every X-ray operator has his own favorite apparatus and methods, but a trip through the department at the Boston City Hospital is as good an illustration as any. Let us suppose you have brought a friend, an emergency case, who has a needle broken



F. J. GARBELL
CALCULUS IN LEFT URETER
DARK SPOT AT LEFT OF SPINAL COLUMN IS THE CALCULUS



off in the palm of the hand. These cases are *bêtes noires* to the surgeons, on account of the difficulty of precisely locating the fragment. The patient is asked to place the hand on a firm support, such as a table, a plate is placed on the hand, a sandbag is put on to prevent movement and the tube brought under the table at a distance of fifteen to thirty inches from the plate. The operator explains that it is an ordinary rapid dry-plate, such as a Stanley or Lumière Sigma, with the emulsion-side towards the face of the yellow envelope on which notes regarding the case are written. A black envelope is inside of this for complete protection. The stock of plates is kept in a lead-lined box. Everything being ready, the current is now turned on and an exposure of four or five minutes is given. Afterwards the operator permits you to look through the fluoroscope. Placing it close to the hand, you see all the bones in fine detail, and the needle, a clear black object, lying in the translucent flesh.

The exposure completed, you are invited into the dark-room. The first thing which strikes you is the large size of the ruby-light, which is a window provided with several sheets of ground-glass, as well as with ruby and orange glasses so that the strength and volume of the light may be regulated by removing or adding as many as necessary. The developer used is pyro, with double the quantity of sodium sulphite called for by the plate-maker's formula, since it is quite important not to have a yellow-stained negative. It is kept in strongly concentrated stock solutions and diluted to half strength in order to bring out all detail with great softness and density. A generous quantity at about 75° F. is flowed rapidly over the plate, extreme care being used to avoid bubbles and streaks which might lead to mistakes in diagnosis. In this strong, warm developer the image comes up very rapidly, showing first the clear, dark high-light around the hand where the rays have had no material to impede their passage; next appears the outline of the bones and the needle, just as you saw them a few minutes previous, and last the fine details of the structure of the bones. Holding the plate up to the light, you see how delicate the gradation is; but more density is required, and the plate is returned to the tray and carried to the point where the whole image shows strongly on the glass-side. Development occupies almost ten minutes, and the plate is then thoroughly rinsed and fixed in the acid chrome-alum bath. The plate comes out beautifully crisp and clean, free from pyro stain and of a good black color.

The wet plate is now sent out to the surgeon and used by him to determine just where to cut for the needle.

In the ordinary course of work, such as locating foreign bodies, ascertaining the position of bones in dislocations, in the diagnosis of fractures, in determining the extent of bone diseases, the presence of calculi and so forth, the plates are washed and dried to be used at leisure. If necessary, a print is made, though much of the fine gradation of the negative is lost. As a general rule, however, prints are made to preserve with the written records. The paper found most useful is a soft-working glossy developing-paper, such as Velox or Cyko. The developer used was the standard metol-hydroquinone.

EDITORIAL

THE ELEMENT OF CHANCE IN PHOTOGRAPHY

IN his eulogy of Mr. A. L. Coburn, one Giles Edgerton makes the following extravagant statement: "Good negatives are very largely a matter of accident. Given the utmost care and wisdom in the selection of subjects and time, it is nevertheless true that the novice may secure with his kodak a more artistic negative than the trained veteran, and that the veteran himself will get the most artistic negatives largely as a result of chance." Whether or not the writer is so blinded by prejudice as to imagine that none except his hero is capable of producing negatives uniformly the result of intelligent, artistic design, his statement ought not to go unchallenged. In the case of the inexperienced enthusiast—with whom it is hit or miss—it occasionally happens that one of his innumerable shots results in a picture full of artistic charm; but then much of the credit belongs to the operator to whom the film is entrusted for development. True, the discovery of a picturesque scene is, to a certain extent, a matter of chance, but only the artist-technician can guarantee a successful negative. A novice, one gifted with artistic instincts, may perceive at a glance the pictorial possibilities of a scene. He takes a snap at it; but unless possessed of the necessary technical knowledge, he may have exposed his film in vain. The element of luck, beyond the good fortune of straying upon a picturesque scene or object, forms no part of the equipment of the expert photographer, unless it be the hope that no accident may mar or impede the consummation of his efforts. Many are the workers whose pictorial triumphs have graced the pages of PHOTO-ERA during the nine years of its existence, and who have studied a scene most critically and with prolonged deliberation, before proceeding to make it their own. If Mr. Edgerton's declaration were true, how does he account for the fact that such accidents happen frequently to such trained veterans as Garo, MacDonald, Strauss, Hollinger, Perscheid, Duehrkoop and others? The charge, which should be vigorously refuted, applies, then, to the large army of unskilled enthusiasts who are satisfied even with the most indifferent of results, and not to the serious worker, who, guided by knowledge and experience, proceeds with systematic discrimination from the selection of his subject—through the various technical operations that accompany the development of the latent image—to the completion of the final result.

OUR FIFTH ANNUAL CONTEST

IN keeping with the policy of PHOTO-ERA, as identified with the highest interests of photographic art, and also in view of the success which attended our last annual photographic competition, the present publisher takes pleasure in announcing another—the fifth annual contest, which is to be conducted along similar lines. A distinct and pleasing feature of this *concours* is the char-

acter of the prizes to be awarded to the successful contestants. The first prizes in Class A and Class B will be of cash; whereas the second, third and fourth prizes in each class will consist of valuable pieces of apparatus, practical and of the latest type. The awards in the fifth grade are also consistently photographic in character. The grand prize, to be awarded for the best collection of prints submitted, will not be a loving-cup, as announced, prematurely, in the August issue of PHOTO-ERA. In deference to the wishes of many eminent pictorialists, whom the editor has consulted, this special award will consist of an object of practical utility, something which will stimulate the legitimate ambition of the photographer to greater possibilities in his chosen line of work, and also have a lasting pecuniary value — a lens, a 5 x 7 Cooke, Series II. It is sincerely to be hoped that the large army of pictorialists, most of whom are subscribers to PHOTO-ERA, will again participate in a contest which gives every indication of proving even more happy in its results than the event of 1905, which, from an artistic viewpoint, alone, was eminently noteworthy. The jury will consist of gentlemen of acknowledged fairness, ability and reputation. Their names will be announced in the next issue of PHOTO-ERA. The rules governing our annual competition will be found among our advertising-pages.

THERE IS ROOM FOR ALL

THERE was received by the editor of PHOTO-ERA, recently, an anonymous letter of a peculiar character. Resorting to exceedingly intemperate language, the writer took us to task for assuming an attitude of silence regarding "the war that is being waged against the Trust." Although we manage to keep tolerably well informed about what is going on in the photographic world, we were not aware of the existence of such a movement in this country. We are in frequent touch with dealers and consumers, throughout the United States, and no complaint of the nature indicated by the anonymous critic has come to our attention. If, as he contends, any considerable percentage of the dealers are dissatisfied with the conditions imposed by this company upon the sale of its goods, why do they not form an organized protest? Why do they permit themselves to be oppressed by a "heartless and sordid monopoly"? There is nothing like good, healthy opposition, if well organized and properly conducted. Why, indeed, do these merchants continue to sell photographic supplies against their will? There have been numerous conventions of photographers, national and state, at none of which this subject, "so vital to the interests of the craft," has been given any serious consideration.

The success and popularity of the goods of the firm in question are due to three causes — the excellence of its products, an able business-policy and judicious advertising — the last involving the expenditure of vast sums of money. It must be borne in mind that the dealer has been saved the expense and trouble of advertising these "objectionable" goods. He has but to make it known that he carries a line of these cameras and films, and business comes to him like magic. But our mysterious correspondent seems to forget that there exist similar lines of

goods of excellent quality made by other firms. These the dealer is at liberty to carry in place of those which, the agitator tells him, are made by the hateful trust and should, therefore, be tabooed. After all that can be said on this matter, it is simply a question of supply and demand. It seems to have a faculty of regulating itself. The so-called "anti-trust" manufacturers are busy and prosperous; i. e., those whose products stand the test of successful application. They have established a steady demand for their products, and this, in many instances, without resorting to the undignified method of abusing their competitors. An inferior article cannot expect to compete successfully with one of superior quality, and no amount of advertising and misrepresentation will ensure its success. When a camera, lens, plate or paper has true and lasting merit and meets the requirements of the practitioner it will sell.

THE COLOR-PHOTOGRAPHY CHIMERA

"COLOR-PHOTOGRAPHY has at last come true!" breezily exclaimed the *Boston Evening Transcript*, recently. The announcement, silly and time-worn, failed to seriously impress an intelligent community, and is fit only to be classed with such myths as the sea-serpent, Jack the Giant-Killer, etc. It is difficult to believe that, in these days of enlightenment, a person of intelligence can be found still clinging to the belief that an object or a scene, as reflected on the ground-glass of a camera, can be photographed *directly* with all its natural coloring.

On the other hand, there are many persons tolerably well informed on many subjects, but not photography, who confuse the three-color printing-process, or even a modification of this process, with the Utopian dream — photography in natural colors. Foremost among the experimenters in this highly important branch of photography are A. and L. Lumière, who demonstrated their well-known starch-process during the middle of last June on the occasion of a visit to Paris by the King and Queen of Denmark. The results, though interesting, were only partially successful, the Lumière Brothers themselves declaring that *dans la pratique les résultats sont peu satisfaisants*. Elsewhere in this issue will be found a résumé of Lumière's simplified method of photographing in colors.

AN OBSERVANT JOURNALIST

THE sapient editor of *The Amateur Photographer*, Mr. A. Horsley Hinton, is not slow; he is only prejudiced. In a recent issue of his excellent journal he announces an important discovery and straightway accords his readers the full benefit thereof. He advises that, in order to facilitate the opening of a roll of photographic prints, manuscript or music, sent by post, a piece of cotton thread be glued inside of the wrapper, with one end slightly protruding. The recipient simply grasps the loose end of the string, pulls it back to the full extent of the wrapper and, presto, the package is undone! We are glad that at last the English photographer is enabled to enjoy so useful and practical

an improvement. Unfortunately for our cultured cotemporary the idea lacks the virtue of novelty. It is quite old and, what must be particularly galling to him, the expedient is of American origin. No, not English, nor even French, but AMERICAN. The device was patented in 1857, and applied equally to envelopes and wrappers. A prominent American express company has used the contrivance for many years on its return C. O. D. cash envelopes, and numerous mercantile firms, throughout the country, have made use of it since 1860.

Whether or not Mr. Hinton noticed this thread-device during his memorable visit to this country in 1904, only he can tell. It seems certain, however — and one needs but to refer to his editorial notice — that our keen and broad-minded cotemporary has discovered something that has been in use fifty years.

RIVAL PHOTOGRAPHIC INDUSTRIES OF EUROPE

THAT Germany is still preëminent in the manufacture of photographic lenses and, to a large extent, of photographic papers, so far as this subject affects Great Britain, is not a source of wonder. It was not enough that in optics that country, excelling in the thoroughness of its scientific research, should dominate the photographic domain by its Voigtlaender, Steinheil, Goerz and Zeiss, but it has always supplied the world with the best grades of albumen paper and, in Europe at least, ranks first in the production of silver papers. With the development of the wonderful optical glass at Jena the lens-industry took a tremendous leap forward, so that the leading opticians in England, France and the United States, under special arrangement, are constructing well-known types of lenses and field-glasses originating in German optical works.

According to the *British Journal of Photography*, the superlative excellence of the German photographic products, as well as the tremendous commercial activity and energy of their manufacturers, are the cause of universal wonder. One begins to understand why it is that certain English cotemporaries are loath to credit the workers in the Kaiser's dominions with their manifest successes in the realm of photography — scientific, industrial and artistic. The *British Journal* appears to be worried about the future of its country's photographic industries, and cites some interesting figures, which, though not exact, afford food for serious reflection. According to these, England imported, during the first three months of the present year, about \$764,000 worth of photographic apparatus and materials from Germany, exporting goods only to the paltry value of \$32,000. Of this small amount \$23,000 represented apparatus, while the imports of German apparatus amounted to no less than \$255,000. This figure, apparently, does not include lenses. England's largest imports were sensitive paper (\$280,000), while it seems that Germany imported none of English manufacture. Germany, however, took \$8,624 worth of dry-plates from the English, who felt not the necessity to reciprocate. Not a word is vouchsafed by our cotemporary about photographic chemicals, one of the foremost of German industries; neither does he allude to another item of importance — FILMS. Is it possible that, as a patriotic Englishman, he — but perish the thought!

THE ROUND ROBIN GUILD

Conducted by ELIZABETH FLINT WADE

A department especially designed for the amateur photographer and the beginner, in which information, advice and criticism will be freely given. Membership may be obtained by sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, Mass.

"Who doth not love the soft September days
When summer lingers lovingly, and fain
Would say farewell? But with her train
Of winged subjects, in the golden haze
She vanishes so silently, we raise
No cry of anguish, for no parting pain
Disturbs our bliss — our loss we count but
gain.
Yet e'en while dear September's name we
praise,
The swallow tempts his wings to longer
flight;
The grasses fade; the brown leaf flutters
down;
Full ripe the thistle-tops and milkweed
blows
Sail far aloft on airy pinions light,
And haste to catch at fleeting Summer's
gown.
Stay! Hath she gone? The faint wind
sighs, Who knows?"

Alas, young Spring has gone and so has Summer glad! A gray mist lies at morn and eve along the vale, the winged seeds fly hither and thither seeking a snug harbor, the crimson hip flames on the rosebush, and the trees are decking themselves for the autumn festival.

LARGE NEGATIVES FROM SMALL NEGATIVES

In a recent number of PHOTO-ERA full directions were given for constructing at small expense an apparatus by which one could make enlargements as successfully as with the expensive enlarging-camera. By a sort of double process one may make enlarged negatives with this same apparatus from which any number of contact-prints may be made, using any kind of paper. The negative must be one free from scratches or pin-holes and full of detail. From this negative make, by printing in the same way as for lantern-slides, a positive, using a slow sensitive plate. The glass positive must not be too dense, a rather soft negative giving the most satisfactory results.

Adjust this negative in the improvised light-tight box in the same way as suggested in the article referred to, and on a bromide paper of as thin texture as can be procured make an enlargement, the size preferably not being over 8 x 10.

When this print is developed and dried it is made translucent by first oiling well with white vaseline and then waxing. Have a sheet of clean blotting-paper somewhat larger than the print, lay the print face down and rub it over with the white vaseline, using a plentiful supply and letting

the print lie over night. In the morning remove all surplus of vaseline with a soft cloth. The waxing-preparation is made by dissolving one ounce of pure white beeswax in four ounces of benzole. When thoroughly dissolved add four ounces each of ether and pure alcohol. Put a little of this in the center of the print and spread it quickly over the paper with a wad of surgeon's cotton or a soft flannel. The print is rubbed softly and evenly until all traces of vaseline have disappeared and the paper is almost transparent. If there are any defects in the negative they can easily be touched out with a very soft pencil.

This paper negative gives as fine prints as a glass negative, especially if during the process of printing the frame is covered with a mask of onion-skin paper.

By this process — which is really more simple than it sounds in the telling — one may obtain a stock of large negatives from his favorite small negatives, and negatives which require small space to store and are unbreakable.

INTENSIFYING WITH URANIUM

URANIUM is becoming an important factor in photographic work. It is used in the intensifying of negatives with most satisfactory results. The solution for immediate use is made up with water, five ounces; acetic acid (glacial), one-fourth ounce; nitrate of uranium, fifty grains; ferricyanide of potassium, fifty grains.

If made up in two solutions the liquids can be mixed when needed. The two-solution formula is as follows:

No. 1

Water	8 ounces
Glacial acetic acid	2 drams
Nitrate of uranium	80 grains

No. 2

Water	8 ounces
Glacial acetic acid	1 dram
Ferricyanide of potassium	100 grains

To use, mix equal parts of both solutions.

The plate is washed well to free it from hypo, then immersed in the intensifier. The action of the intensifier is to turn the image first a warm black, then to a brown, until finally it passes through the gradations of color and assumes a tone resembling red sienna. The negative must be examined often during the process, as it is liable to become too dense. After it is judged to have reached the proper density — which can be determined by looking through the negative toward the light — the plate is washed for a few minutes in a diluted solution of acetic acid in the proportion of one dram of the acid to a pint of water.



DR. ALBERT R. BENEDICT
FIRST PRIZE — NOCTURNAL PHOTOGRAPHY





J. A. MURDOCH

SECOND PRIZE — NOCTURNAL PHOTOGRAPHY

Should the intensification have been carried too far, it can be removed by placing in a tray of water to which a few drops of ammonia have been added.

The color of the negative after uranium intensification makes a great improvement in the printing of the picture. The brownish-red tones of the film seem to be a specially good medium to govern the action of the light on the paper.

Uranium intensification is one of the simplest methods of strengthening the printing-qualities of a negative.

TRANSFERRING FILMS

WHEN one is so unfortunate as to break a negative the film can be easily transferred to a whole glass, provided the film itself has not been torn through.

The broken negative is first laid glass side down on a plain piece of glass corresponding in size, and held in place by means of melted wax. To do this effectually first warm the plain glass, drop a bit of wax on each corner, then lay the broken negative on the glass and let it stand till it sets.

Make up a solution of alcohol, four ounces; water, two ounces; and hydrofluoric acid, thirty

drops. Place the negative with its glass support in a rubber tray and flow it with this solution, rocking it gently to and fro as in developing. When the surface is thoroughly wet let it remain for a few minutes until the film begins to loosen from the glass. This can be told by trying it at the edges with a toothpick. Have another tray ready with alcohol and water in it, using twice as much alcohol as water. In the bottom of this tray put a clean glass the size of the broken negative.

As soon as the film is well-loosened begin at one edge and push it gently from the plate, rolling it together as it becomes detached from the glass. Slip a piece of glass under the film and transfer it to the tray of alcohol and water, and with the toothpick gently unroll the film and let it sink to the plate that lies at the bottom of the tray.

When it is in place on the plate lift it from the tray, drain well, expel all bubbles that may have formed between glass and film and set it in a place free from dust.

The operation of removing the film and transferring it to a whole glass does not take over fifteen minutes and is a simple and easy matter even for the inexperienced amateur.

Monthly Competitions

Closing the last day of every month.

Address all prints for competition to PHOTO-ERA, The Round Robin Guild Competition, 383 Boylston Street, Boston, Mass.

PRIZES

First prize: Value \$10.00.

Second prize: Value \$5.00.

Third prize: Value \$2.50.

Honorable Mention: In addition to the awards, the names of those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be published.

Prizes may be chosen by the winner, and will be awarded in books, magazines, enlargements, mounts, photographic materials or any article of a photographic or art nature which can be bought for the amount of the prize won.

RULES

1. These competitions are free and open to all photographers, whether or not subscribers to PHOTO-ERA.

2. As many prints as desired, in any medium, mounted or unmounted, may be entered, but they must represent the unaided work of the competitor.

3. The right is reserved to withhold from the competitions all prints not up to the PHOTO-ERA standard.

4. *A package of prints will not be considered eligible unless accompanied by return postage at the rate of one cent for each two ounces or fraction.*

5. *Each print entered must bear the maker's name, address, Guild number, the title of the picture and the name of the competition for which it is intended, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.*

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA. If suitable, they will be reproduced, full credit in each case being given to the maker.

SUBJECTS FOR COMPETITION

August — "Waterscapes." Closes September 30.

September — "Sunsets." Closes October 31.

October — "Windows and Doorways." Closes November 30.

November — "Genre Studies." Closes December 31.

December — "Home Portraiture." Closes January 31.

AWARDS — NOCTURNAL PHOTOGRAPHY

First prize: Dr. Albert R. Benedict.

Second prize: J. A. Murdoch.

Third prize: D. H. Brookins.

Honorable Mention: Wm. S. Adams, M. A. Vauch, John Dove, F. W. Greenman, Peter Clausen, Mrs. Loudovica Butler.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.

C. R. II.— Your negative is very much under-developed. It seems to have detail which may be brought out by intensifying. Try the uranium intensifier, the formula for which is given in this number. If not successful the negative can be restored to its first quality and the trial repeated.

BERTHA B.— Your trouble is metol poisoning. It is only local and may be cured easily. Any physician will give you a formula for an ointment which will quickly remove the trouble. After being once poisoned by metol the same thing is likely to occur again, and it is wise to use rubber finger-tips when developing with this chemical.

RUTH S.— Stand-development means standing plates on edge in a tank fitted with grooves to keep the plate upright, filling the tank with weak or much diluted developer and letting the plates stand in the solution till they are developed. Plates may be left in a weak developer all night without danger of over-development.

GEORGE DEANE.— Adulol is a developing-agent derived from quinol. It comes in two forms, one being called Adulol Schering and the other Adulol Hauff. It has much more active qualities than quinol, the image coming out in about twenty seconds and development being complete in about four minutes. Adulol produces a very soft-printing negative.

O. J. PENNY.— It is not necessary to back your plates, and unless great care is taken in the process the plates are apt to be marred or scratched. Why not use non-halation plates for interiors where windows are included in the angle of view? The exposure for non-halation plates must be twice as long as that for the ordinary plate.

REGINALD C.— You can have a telephoto attachment for your lens and you will find it a great help in making nature studies. One does not need to go so near the object to be photographed, and in the case of timid birds and wild animals this is a great advantage. The prints which you enclose are very interesting, especially the one of the heron.

F. D. S.— You can get samples of cover-paper by addressing any manufacturer of papers. The Mitteneague Paper Co. carries a fine line of cover-papers specially adapted for use as photographic mounts. Use plenty of paper, and do not place the print in the center of the mount. Paste at the corners or just across the top edge. A platinum print will lie flat on the mount, and no print looks well pasted down flat on a mount.



D. H. BROOKINS

THIRD PRIZE — NOCTURNAL PHOTOGRAPHY

Print Criticism

Address all prints for criticism, enclosing return postage at the rate of one cent for each two ounces or fraction thereof, to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing process.

C. C. — Your landscape is a well-taken picture and very artistic in treatment. The color-values and lights and shadows are well rendered. The print would gain by having about an inch trimmed off from the left side.

D. L. H. — The portrait submitted is too flat, showing that the lighting has not been well managed. Then the hands are as strongly lighted as the face, making an unpleasant spot of light where shadow would be better. The hands should be kept more or less in shadow, especially when they are lying in the lap, as in the case of this picture. Try the same pose, which is very good, and instead of so strong a light on the face

subdue it and screen the hands so that they are low in tone. The bow in the hair is inartistic.

S. M. R. — This picture landscape is an example of what a landscape picture should not be. It is divided in the center horizontally by the sky line and perpendicularly by a tree. Cut the print off at the right-hand side to within half an inch of the tree-trunk; cut off an inch from the foreground; and you will have a picture which, while possessing no real artistic value, will still be pleasing to look upon. If you will look in recent numbers of PHOTO-ERA you will find many valuable rules on composition of pictures, and hints as to what to include and exclude.

T. L. — The only fault to find with this print, which is a picture of a child reading a book, is in the child's dress. It is too evidently dressed for the occasion, and imparts the importance of clothes to its attitude. The subject is well chosen, the surroundings simple, the lines are well arranged, and if the child was dressed in a simple every-day frock the effect would be very pleasing. The starched and stiffened garments make harsh and unpleasant lights. The white bow in the hair should be changed to a soft red or tan, something that will give good color-values, not absorb all the light and appear as a white splash.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

Conducted by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to Phil M. Riley, 383 Boylston Street, Boston, Mass.

HOW TO FIND THE FACTOR FOR YOUR FAVORITE DEVELOPER

ALMOST every photographer has a developing-formula which he likes especially, and for which there is often no published factor. For those workers who wish to employ factorial development, Alfred Watkins, in his excellent manual, gives the following methods of finding the factor for any special developer.

■ Of combination developers Mr. Watkins says:

"The factor is, approximately, the average of the two constituents, if in equal parts. Thus, with hydroquinone (5) and metol (30) the average would be $7\frac{1}{2}$. But if the combined developer contains two parts of hydroquinone to one part of metol (three parts in all), you put down the factor for each of the three parts and divide by three, thus:

$$\frac{5+5+30}{3}=13\frac{1}{3}$$

"But a combination developer containing pyro does not conform to this rule, and its factor must be ascertained by actual trial.

WHAT ALTERS THE FACTOR

"With pyro (as with amidol), the factor varies with the strength in grains to the ounce. But in all other developers, as far as I know, the factor does not alter with strength or dilution.

"The use of bromide (or its omission) alters the factor greatly with pyro, and, probably, with short-factor developers, such as hydroquinone. With high-factor developers, such as metol, I cannot find it has much effect.

"Variations in the amount of alkali in the developer do not alter the factor.

"As a general rule, the factor which is right for one plate or film is also right for another plate or film. It is true, that some plates develop much more quickly than others, but the time of appearance makes allowance for this. I have often, after testing six different makes of plates for their speed, exposed them in accordance with their speed, and then developed them with the same factor. In almost all cases I secured six negatives which were practically identical, although some have (in accordance with time of appearance) had to be developed longer than others. A double emulsion, as in the Cristoid film, seems to call for a much higher factor than a single one.

"In order that inquirers shall be able to work out the grains to ounce of their particular fad (and not expect an overdone experimenter to do their sums for them), I give the rule to follow: Take the total quantity of water in No. 1 or A solution, add to this the relative proportion of

No. 2 or water which is required to make the complete developer, and then divide this quantity of liquid into the full amount of pyro given for the No. 1 or A solution. The result is the grains of pyro to ounce of developer."

Mr. Watkins suggests the following trial factors for various developers:

Aduro, 5; amidol (two grains per ounce), 18; diogen, 12; edinol, 20; Eikonogen, 9; Glycin (carb. soda, 8) (carb. pot. 12); hydroquinone, 5; imogen sulphite, 6; kachin, 10; metal, 30; pyrocatechin, 10; ortol, 10; rodinal, 40.

1	gr. pyro-soda, no bromide	18
2	" " " " " "	12
3	" " " " " "	10
4	" " " " " "	8
1	" " " $\frac{1}{4}$ gr. bromide	9
2	" " " $\frac{1}{2}$ " " "	5
4	" " " 1 " " "	4

FOCAL LENGTHS

THE habit of using short-focus lenses infected the entire photographic world simultaneously with the habit of using hand-cameras and the modern anastigmat. A very bad habit it is, too, although there is absolutely no harm in such a lens when used rightly. A short-focus lens embraces an angle of view which it is impossible for the eye to comprehend, and the picture is not, therefore, true to nature as one sees it. This is because the eye is a long-focus, narrow-angle instrument and is still further hampered by the selective human brain which interests itself in but one thing at a time. Now, pictorial photographers usually prefer long-focus lenses to short-focus lenses because they tell the truth, while the latter tell so much more that it becomes merely another way of telling a lie. Whatever technicians may say to the contrary, realism — the truth — is the aim of the genuine pictorial photographer, even though he may call it impressionism; but it is realism to a human impression of the scene, not to a lens impression. Let the focal length be long.

A SUGGESTION FOR COPYING PRINTS

F. E. COOMBS, of Natick, Mass., offers the following practical suggestion for avoiding grain when copying paper prints or drawings:

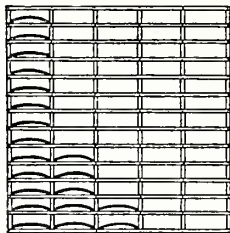
Work at night, or in a darkened room. Use two strong lamps (any kind of illuminant) of approximately equal candle-power and actinism. Arrange the lamps in front and at each side of the sheet to be copied. Hold a pencil upright and about an inch away from the drawing, and move the lamps into such a position that the two shadows of the pencil shall be as nearly as

possible of same shade. If one flame is an inch higher than the other, there will be no grain visible, with a proper exposure, even on the roughest paper.

DRYING PICTURE POST-CARDS

HERE are two methods:

1. Make a rack, of wood and wire, as suggested by diagram, the width between the uprights being slightly less than the width of a standard post-card. In inserting the cards, curve them with the film surface upward and convex, then, when quite dry, they will easily pack down flat.



2. A method used by some very large producers of post-cards. Have a roll of dry, fluffless linen or cotton cloth, with two rods, rolling it off one and on to the other. After washing, surface-dry the cards by dabbing them with a pad of dry



cloth, and lay them face downward, side by side, on the cloth of the roll. When a few feet are covered, roll the cloth on to the receiving-rod, then unroll another length on the table. The rolls curve the cards the right way, and, if the cloth is thick and *quite dry* before using, this is the best method of drying a great number of cards in little space. Obviously, certain surfaces are unsuitable for this treatment.—*The Photographic Monthly, London.*

THE WASHING OF PRINTS

It is perfectly immaterial whether a print-out or a development paper be adopted; one, if not the most important, operation, if permanency is required, is a thorough washing after fixation. Naturally, one assumes that the fixation has been complete; for if this is not so, then there is very little hope of obtaining permanent prints. The fixing-bath must not be used too long, it should not be too cold, and should have free access to every print, and the latter should remain in a sufficient time. It may be accepted as an axiom that, given a properly prepared fixing-bath, al-

kaline for print-out and acid for development papers, and the prints are kept well below the surface, there is not the slightest danger of reduction.

Besides this, there is also the fact that a properly fixed print is much more readily washed free from the traces of hypo than an imperfectly fixed one. In the latter case it is impossible, in fact, to completely eliminate all the hyposulphites except by chemical means.

The usual plan of washing prints or post-cards, for the latter may also be considered here, is merely to put them into a vessel with a constant stream of water flowing in and out. Unless this supply of water is so arranged as to keep the prints thoroughly on the move, there is very great danger of their collecting at the bottom of the tank or dish in a solid mass, and there is practically no change of water. If the prints are kept on the move there is always danger of the tender surfaces being damaged by friction against one another or the sides of the vessel.

There is another point which, whilst it may not be of much importance in some cases, most decidedly is a factor to be reckoned with when the water-supply is limited or it is supplied by meter.

This method of washing is extremely slow in removing the hypo, and this can be very easily seen by placing in the tank or dish some deep-colored aniline-dye solution, and allowing the water to run in and out in the usual way. It is astonishing what a long time it takes for the last traces of color to disappear.

A much more effective plan, which is also extremely economical of water, is the following: As soon as the prints come from the fixing-bath throw them into a dish of water, running, if you like, for five minutes, then take them out and place one on top of the other in heaps of about twelve and squeegee vigorously with a roller squeegee, then put them back into water, separating them well and allowing about a pint and a half of water for every square foot of print. Keep the prints gently on the move — turning them over two or three times will be sufficient — then remove again after five minutes' soaking and again squeegee and repeat the operation. Naturally, the dish should be well washed out between the soakings.

If this plan is adopted, about six changes of water with intermediate treatment will be quite enough to remove all traces of hypo. In the case of post-cards a longer treatment is advisable on account of their thickness.

For commercial work on a large scale it is advisable, in the case of print-out post-cards, to use the chrome alum and bisulphite combined bath, which tones very evenly and so hardens the print that they will stand warm water. Then the temperature of the water may be raised, and provided one does not exceed about 110°Fahr. there is little danger of trouble from the softening of the card, and the hyposulphites are much more rapidly removed.—*Photo-Notes and the Bromide Monthly, London.*

NOTES AND NEWS

Announcements and Reports of Club and Association Meetings,
Exhibitions and Conventions are solicited for publication

PHOTO-ERA NOT SOLD

How strange that some persons seem to know more about other people's business than their own. Here 's a photographic journal busying itself with the affairs of PHOTO-ERA, and boldly asserting that this publication has been acquired by the proprietors of the *American Amateur Photographer and Dark Room*, adding that it has the news on "good authority." The statement is thoroughly untrue. It is passing strange that the publisher of this sensational statement did not consult the proprietor of PHOTO-ERA, the best authority in such a matter, before printing his "exclusive;" but he did not stop for such a trifle.

THE JURY OF PHOTO-ERA'S FIFTH ANNUAL PHOTOGRAPHIC CONTEST

In order to assure the subscribers intending to participate in our Fifth Annual Prize Competition of the absolute fairness with which the prints will be judged and prizes awarded, the publisher of PHOTO-ERA will appoint a jury which cannot fail to meet general approval. The members of this jury will comprise an American artist, William L. Taylor, himself a practical photographer; Arthur Fairbanks, director of the Museum of Fine Arts; a professional art-critic, William Howe Downes, of the *Boston Transcript*; a professional photographer, Rudolf Eickemeyer, of New York; an amateur photographer, F. Benedict Herzog, of New York; and Wilfred A. French, publisher and editor of PHOTO-ERA.



THE GRAND PRIZE

Photo-Era's Fifth Annual Photographic Contest

THE NATIONAL CONVENTION

THE great national event among the professional workers, the annual convention of the

Photographers' Association of America, took place at Dayton, O., August 6-9, at the very time we went to press with the September issue. That it proved to be an emphatic and brilliant success was a foregone conclusion. We hope to have a report of this eminent occasion in the October issue of this magazine, which should appear promptly September 20.

ADDENDA TO ARTICLES BY JAMES THOMSON

IN connection with the article "A New Printing-Paper," in the June issue, Mr. Thomson advises us, in the interest of better results, that while the common and easily-obtained brown-scale ammonia iron citrate will serve well enough, the green variety in the sensitizer will be an improvement. The sediment present in the solution where the brown salt is employed makes the elimination of traces of it difficult where the texture of the paper is at all porous. Even prolonged washing sometimes will not wholly free from a slight yellowness in the whites. The use of the ammonia citrate of iron (green scales) furnishes a perfectly clear liquid and there follows through its use in formulæ not the slightest trace of stain. Beautiful gradations in the half-tones and pure whites are easily obtainable.

We also note two typographical errors in the article "Mirror Reflecting Cameras Antique and Modern," by Mr. Thomson, which appeared in the July issue. "Laymen" at the top of page 28 should be "women," and at the close of the same paragraph "missing of the hair" should read "mussing of the hair."

PICTORIAL SUBJECTS IN PROFUSION

CAMERISTS intending to pass the summer or autumn in a locality abounding in beautiful scenery can do no better than to procure a copy of the illustrated booklet, "The White Mountains of New Hampshire." This far-famed region is known as "the Photographer's Paradise," a title it fully deserves. The editor of PHOTO-ERA has photographed very extensively among the mountains of New Hampshire during the past twenty-five years, and so have thousands of others. A request, accompanied by a two-cent stamp, sent to C. M. Burt, general passenger agent, Boston & Maine Railroad, Boston, Mass., will secure a copy of the above-named booklet.

GOERZ COLOR LENS NO. 200,000

THE C. P. Goerz American Optical Company is very anxious to regain possession, if possible, of No. 2 Color Lens, numbered 200,000,

which was recently sold, at auction, by the receiver of R. J. Golsen, of Chicago. The Company will be glad to give the owner a similar lens, or make any satisfactory arrangement with him in order to secure this particular lens, which, obviously, has an historical value. It is to be added to the collection of lenses at the Berlin office, where, nestling among medals and trophies, repose No. 1, No. 1,000 and No. 100,000.

THE PORTLAND, MAINE, CAMERA CLUB

THE Portland Camera Club of Maine, whose extremely interesting annual exhibition was reviewed in the June issue of PHOTO-ERA, ranks high among the regular photographic bodies of this country. Pictures by S. S. Skolfield, J. R. Peterson, H. A. Roberts, G. E. Fogg and E. E. Cheney grace the pages of the current issue of this magazine. Of these, "Late Afternoon, Winter," by Fogg; "Winter," and "The Wave" by Peterson, were shown in the Third American Salon, the last-named picture having been chosen by the editor for the insert in the present issue of PHOTO-ERA.

A UNIQUE ARTICLE ON COLORING PHOTOGRAPHS

A NOVELTY featuring one of the winter issues of PHOTO-ERA will be a series of original articles on how to color photographs artistically, from the pen of an expert colorist of reputation — Bertha I. Barrett, of Boston. This artist will describe in a lucid and practical manner her own method of coloring photographic prints, using W. & N. water-colors. In order that our readers may profit directly from the valuable advice imparted on this subject, Miss Barrett will indicate how to color certain familiar subjects, copies of which may be procured of the makers at a nominal price. These subjects have appeared in the pages of PHOTO-ERA and are as follows: Landscape — "In the Hills of Bordighera," by G. R. Ballance, St. Moritz-Dorf, Switzerland, platinum print, price, 1.25 francs, postage extra; Marine — "The Replica of the Painted Ship," by William Findlay, Fraserburgh, Scotland, matt silver print, price, one shilling, postage extra; Snow-scenes — "Snow Shadows," by John Chislett, Crown Hill, Indianapolis, Ind., and "Winter in the Woods," by C. W. Christiansen, Chicago Camera Club, Chicago, Ill. The above-named subjects, selected by Miss Barrett for her purpose, appeared respectively in the following issues of PHOTO-ERA: June, May, April and March — all of 1907. We have not yet ascertained whether Mr. Chislett and Mr. Christiansen will consent to supply copies for the purpose stated; but if assured that no improper use will be made of the prints after they shall have been colored, these gentlemen, no doubt, will yield — for the cause of art.

Miss Barrett has studied art in Europe and has copied extensively in the continental picture-galleries. Her work is highly praised by

competent critics, and her articles for PHOTO-ERA will be anticipated with keen pleasure.

PHOTOGRAPHERS' ASSOCIATION OF CANADA

THE annual convention of the largest photographic body north of the United States was held July 24 and 25, in Victoria Hall, at Toronto, Canada. A distinguishing feature of this meeting was a desire to accomplish something for the material benefit of the craft. It was, therefore, unanimously resolved to petition the Dominion Parliament to relieve the photographer of superfluous and disfiguring copyright marks on photographs and, at the same time, to reduce the amount of the fee from \$1.00 to \$0.50. Mr. W. S. Lively, of McMinnville, Tenn., delivered an address, speaking on the importance of photographic associations — State and National. Mr. F. L. Cornell gave an instructive talk on "Retouching," and Mr. R. Lawrence, of Rochester, spoke on "Lenses." Entertainments were furnished at the expense of dealers and manufacturers — J. G. Ramsey & Co., H. C. Tugwell & Co., W. A. Lyon & Co., Lockhart Photo-Supply Co., Canadian Kodak Co., and Defender Photo-Supply Co. The announcement that Mr. Joseph Di Nunzio had donated a sterling silver shield as a prize for the best display of prints on Angelo paper — to be competed for next year — was received with applause.

The attendance was excellent and the display of pictures very fine. It is gratifying to record that everything was accomplished as planned. All the present officers were reelected. They are as follows: A. M. Cunningham, Hamilton, president; J. Frank Jackson, Barrie, first vice-president; John Kennedy, Toronto, second vice-president; Frederick Roy, Peterboro, third vice-president; E. Poole, St. Catharines, secretary; Charles L. Rosevear, Toronto, treasurer.

THE THREE-COLOR PRINTING-PROCESS

EVERY year, with the regularity and persistency of the sea-serpent myth, comes the report of the discovery of color-photography. This year the story emanates from Paris, the wonderful invention being accredited to A. and L. Lumière, the clever chemists of Lyons, France. After carefully investigating the very elaborate though not official account of the affair in a French illustrated weekly paper, we found that it referred to the well-known starch process of the Lumières, a full account of which was printed in the photographic journals last February. The sensational press of this country wisely refrained from mentioning the subject, while the dignified portion of the daily press, after obtaining up-to-date information regarding the three-color printing-process and scrutinizing the claims of the enthusiastic champions of the Lumière Brothers, were prudently conservative in their views. To scribes like these, "modest doubt is the beacon of the wise."

Nevertheless, the Lumières actually have a

plan of printing photographically a tri-color positive print or transparency from one plate, instead of three. These brilliant experimenters got up the starch-process and their latter process is a modification of this. It consists briefly of mixing minute colored particles of a uniform size of potato starch, some red, some blue, others yellow, in a gelatine bichromated film, which is hard, spread on a glass plate. The sensitive emulsion is coated over this and exposure is made with the glass side towards the object, in the camera. The colored starch particles act as a color-screen, and from the negative positive prints are made on another colored plate in the same way. Lumière's agent was in New York several months ago and is said to have shown some very fine specimens of the Lumière prints. The high reputation of these two photo-scientists justifies the belief that their recent improvement of the tri-color process is a *fait accompli*, although it may be reasonably supposed that, like the process at present in use, results absolutely true to nature will be the exception and not the rule. Up to the present time color-prints, while in some instances extremely realistic, leave much to be desired in respect to chromatic truthfulness.

What has long been wanted is a method which shall be less elaborate than the present three-color system, admit of making an unlimited number of copies, if desired, and present the tints of the original object with absolute fidelity.

PHOTOGRAPHIC CONTEST AT THE TAUNTON FAIR

A PHOTOGRAPHIC prize competition, open to all amateur workers, will be again a feature of the Bristol County Fair, to be held at Taunton, Mass., Sept. 17, 18, 19 and 20, 1907. The exhibition will be under the personal charge of John Truex, as in previous years. There are no limitations as to number and size of prints, which must be mounted, but need not be framed. All data must be on the back of pictures. All work on negatives and prints to be by the exhibitor. The cash premiums range from \$1.00 to \$7.00, each, distributed as follows: \$1.00 to \$4.00 for portraits; \$1.00 to \$4.00 to genre, landscape, marine and still-life divisions; and \$1.00 to \$7.00 for collections of not less than six prints. Entries, on or before September 14, to Carleton F. Sanford, Taunton, Mass.

The editor of PHOTO-ERA is reliably informed that this contest will be conducted in a highly creditable manner, and suggests that amateurs throughout New England, especially, make an effort to send prints, assuring them that same will be returned on the closing day of the fair.

THE CAMERA USED IN PHOTOGRAPHING MARS

Now that the canals of Mars have been successfully photographed — the feat being due to the enterprise and liberality of Professor Percival Lowell of the Massachusetts Institute of Technology and the acknowledged authority on

the topography of Mars — it may be interesting to know something about the camera used on this eventful occasion, which took place early in July last, in the Peruvian Andes. This camera, designed for Professor Lowell, was constructed by William Gaertner, of Chicago, maker of scientific instruments. Mr. Gaertner's camera is in the general form of a four-foot brass tube, one end fitted to be clamped to the end of an eighteen-inch telescope, and the other containing a shutter and plate-holder. The main tube is in two parts, the one telescoped into the other and adjusted with a device for slow focusing.

The unusual features of the apparatus are a peculiar arrangement of the plate-holder, by which a large number of exposures may be taken on one plate, and a concave lens, which enlarges the image on the plate instead of diminishing it, as do the lenses of the ordinary camera. By pressing a pneumatic bulb the operator may move the plate so that as many as fifty exposures may be taken, each exposure showing a different phase of the planet. On account of the difficulty of following the planet's motion accurately, however, the exposures could not be longer than ten or twelve seconds. Each image on the negative is about one-eighth of an inch in diameter.

Without referring to the question whether or not the canals of Mars are proof positive of the existence of human life on the fiery planet, it is at least a source of satisfaction to know that the markings, so carefully observed and drawn by Professor Lowell, are absolute realities — proved by photography — and are not due to visual suggestion, as has been insinuated by jealous, narrow-minded investigators.

AMERICAN FEDERATION OF PHOTOGRAPHIC SOCIETIES

THE most important recent event was the belated display in Wilkinsburg of the Third American Photographic Salon, July 13 to 23 inclusive. Owing to the impossibility of securing a suitable exhibition-hall at that season of the year the collection was hung in the studio of R. L. Sleeth, Jr., 1120 Wood Street, where it was seen to excellent advantage, despite the fact that the attendance throughout taxed the capacity of the premises. The full number of 275 pictures, representing fifteen countries, was shown and the interest created was profound, the strong artistic character of the pictures being heartily enjoyed. The exhibition was held under the auspices of the Pen, Pencil and Camera Club, greatly increasing the prestige of that organization.

The prospects for the Fourth American Salon are extremely bright. Entries from abroad had already begun to arrive in July. The opening exhibition will be held in Pittsburg during the first two weeks in November, this year. Several Eastern cities have been negotiating with the Federation for admission, and privilege to exhibit in the next Salon. If arrangements to that effect are consummated, the limit of the itinerary will have been reached and a waiting-list is in sight.

WITH THE TRADE

A NEW DEPARTURE

THE Mirmont Photo-Paper Co., of Glendale, Brooklyn, is making a unique and interesting experiment in marketing its well-known "New York" papers. It has secured a lease of the ground-floor store at 18 East 23d St., New York, where it will carry a \$15,000 stock of photographic papers for the convenience of its patrons in Greater New York. To the best of our knowledge this will be the only retail store in the world devoted only to the sale of photographic papers.

The store will be under the management of Secretary O. H. Hart, assisted by a force of experts including Sam Oswald, George Barrows and Bill Nye, who will demonstrate the papers in the studio trade as well as at headquarters. We understand that before the end of the year the Mirmont Photo-Paper Company will open similar stores in Chicago, Philadelphia and St. Louis. To meet the increasing demand for its goods, the Company has started to duplicate its entire factory outfit. This was begun on June 18, just one year after we had announced in these columns that it would rebuild its plant which had just been completed only to be destroyed by the San Francisco disaster — truly a double-headed Phoenix.

BAUSCH AND LOMB'S NEW LENS-CATALOG

THE revised catalog of photographic lenses made by the Bausch and Lomb Optical Company, of Rochester, N. Y., has come to hand. It attracts the eye by its superb appearance, the paper, printing and illustrations being of the highest possible excellence. What interests our readers chiefly, however, is the information given about lenses, and here none will be disappointed. A brief reference to the Company's history in lens-making is followed by a chapter devoted to up-to-date information, practical and authoritative, concerning photographic lenses. Then follows a list of the Zeiss lenses, which, as the result of a special arrangement with the Carl Zeiss Optical Works of Jena, are constructed by the Bausch & Lomb Company, at Rochester. These American-made Zeiss lenses are in every respect, scientific as well as technical, the equal of those made in Germany; for they follow the same formulae, consist of the same grade of Jena glass, and are as critically tested during and after construction. The types listed are the well-known Tessars, two series, f-4.5 and f-6.3; the Zeiss Extreme Wide Angles, f-18; the Zeiss Protars, series VII, f-12.5, being medium wide angle, yet speedy; Protars, series VIIa, f-6.3 — the famous convertible type. A page is given up to sets fitted with the Volute Shutter. The pop-

ular Plastigmat lens, Bausch & Lomb's own symmetrical doublet and lower in price than the Zeiss lenses, fills another page; likewise the Company's Extra Rapid Universals, and its high-power Telephoto lens. The Bausch & Lomb Ray Filters are also shown, together with illustrations of their efficiency, the Volute Shutters concluding the very interesting and valuable price-list, a copy of which should be in the possession of every photographer.

REFLECTING-CAMERAS

IN buying cameras of the reflecting type, it pays to get a good one, and the best is none too good for the serious worker. Thus such eminent pictorialists as Alfred Stieglitz, Eduard Steichen, Alvin Coburn, Silsby Sisters, Mrs. W. W. Pearce and many others are using the Graflex Cameras under the skylight as well as in the open. The millionaire class of amateurs is also quick to appreciate a good thing; hence the Graflex Cameras are used by a large number of wealthy men, including George Gould, W. K. Vanderbilt, A. C. Bostwick, George D. Pratt, H. D. Rogers, August Belmont, R. H. Stillman and Spencer Trask. The reason is that these cameras of Folmer & Schwing are made from the very best materials obtainable and the workmanship is of the utmost superiority. The mirrors are ground from Jena glass with both planes optically true. The slightest warping of these mirrors would cause them to be rejected. The silvering is very carefully done and inspected, the slightest blemish noticeable in the mirror making it necessary to strip and resilver it. This critical inspection is carried through in every detail; every part must come up to a standard of perfection before it is allowed to go into the camera. No wonder the Graflex represents the high-water mark of camera-construction.

RALPH J. GOLSEN

IN these days of trickery and sharp practice, especially in mercantile life, it is refreshing to find a case where a conscientious effort is made to satisfy the creditor. In the matter of Ralph J. Golsen, dealer in photo-supplies in Chicago, who went through bankruptcy not long ago, it is gratifying to relate that the trustee — the Royall Trust Company, of Chicago — declared a dividend of twenty-nine per cent. Although a larger distribution would, doubtless, have been more gratifying, the creditors of Mr. Golsen realize that a smaller dividend was within the range of possibility, and they are correspondingly pleased. For some months past Mr. Golsen has resumed business, his firm being known as the Ralph J. Golsen Supply Co., continuing at the old stand — 72-74 Wabash Ave. Chicago.

PHOTO-ERA

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D. H. BROOKINS
COMMERCE ON THE CHICAGO RIVER
SALON CLUB OF AMERICA



PHOTO-ERA

The American Journal of Photography

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OSCAR VON ENGELN

DECORATIVE GRAPE STUDY

The Work of the Salon Club

ROBERT KOEHLER

Director of the Minneapolis School of Fine Arts

WITHOUT doubt we are still far from being an "artistic people;" and within the lifetime of the present constituents of our nation it is not likely that we shall attain to that distinction. Nevertheless, it does no longer require any diligent search to discover the presence of true art among us, nor is this localized in any particular part of the country, though necessarily more prevalent in some sections than in others. There is, however, no community in the States in which art in some form, consciously or unconsciously, is not accorded more than passing attention; while in the older centers of culture, life without art is no longer thinkable. This has not always been so within the memory of the present generation, and you may meet men to-day (but no women) who freely acknowledge that they have no use for art and actually live up to their standard — or think they do, by refusing to patronize picture exhibitions and symphony concerts. While it is undoubtedly true that many who regularly attend these functions are unable at first to distinguish between good and bad painting, between classic and trashy music, they are bound in the course of time to gain such knowledge, and delight in the achievement. All art-appreciation is a matter of growth; no one is born, full-fledged, thereto. Opinions differ widely as to the best methods of fostering such growth, none of them reaching all for whom it was designed. The most hopeful pros-



CARL RAU

SALON CLUB OF AMERICA

GRIEF

pect is offered by the present attitude of our public schools in recognizing the importance of the fundamental principles of art in education; and while these are not always taught in the most scientific manner, much good has already been accomplished and the tendency is toward constant improvement of methods. What an advantage our children have over their parents! Art with them is no longer the sole privilege of a few, is no longer to be sought only in costly articles which none but the wealthy can procure, but may be found in quite inexpensive furniture,



DWIGHT A. DAVIS

SALON CLUB OF AMERICA

HANDICRAFT

carpets and wall-papers, as well as in prints and pictures produced by mechanical processes, governed by the skill and judgment of an artist.

It is no longer a matter of dispute that photography is more than a mere mechanical process, though it is not so very long since the question has been decided, while many an artist of the brush still looks askance at him of the camera and refuses to call him brother. But not a few eminent painters are now on record approving of the photographer's methods as a legitimate means for artistic



SARA HOLM

DECORATIVE ARRANGEMENT

expression, while some have themselves adopted them as part of their craft, making chemicals and sunlight serve the purpose of brush and pigment.

Photography has now become a well-recognized expression of artistic feeling, and certain exponents of the art have achieved enviable fame, their names being as well known in all civilized countries as those of many painters — or deserve to be.

The exhibitions of the "Salon Club of America" are art exhibitions, worthy of much greater popularity than they already enjoy. They appeal far more to the artist than they do to the professional photographer — more's the pity. For the latter should gain inspiration from this work and apply it to his own. Your customers would not have it? Educate them up to it. But first educate yourself. Discard the notion that your work is good because your customers like it; they know less than you, and very likely you don't know all.



LOUIS FLECKENSTEIN
DREAMING
SALON CLUB OF AMERICA



Here are men and women devoting their lives to photography, not primarily for the purpose of making a living thereby, but because it offers a chance to produce things of beauty, objects of art, that will live as such in times to come, giving delight to people long after the original models have ceased to exist or to interest any one save for the artistic possibilities they suggested to the photographer. When to-day we see a poorly-painted portrait of some notable personage of the early seventeenth century, we are apt to say, "Oh, why didn't he have Velasquez paint it? Then we should have something worth while." And so it will be with your mechanical likenesses; if any should survive, people will say, "Why didn't he have some camera-artist do it? Then it would be worth having."

Take, for instance, F. E. Bronson's "Study of a Head and Hand." The picture will fascinate forever by virtue of its artistic qualities, besides evidently being a faithful portrait of the sitter. The eye is at once attracted by the happy arrangement of lines and masses, which fill the space in a most pleasing manner. Then there is an adjustment of values, an exquisite gradation of tones, that would command the appreciation of Whistler. The elimination of all detail in the hair, the unobtrusive, but still perfect modeling of the face, are qualities which only an artist of exceptionally fine feeling can achieve. Such qualities are not all due to a perfect camera or to pure chemicals any more than long-handled brushes and a table-top palette could alone result in Whistler's portrait of his mother. It is difficult to conceive how any one not at once attracted by the picture could not learn to like it when made to understand the artist's purpose, and why any sitter should not like to have as good a picture of herself or friends.

Still, this is but one conception, inspired, no doubt, by certain characteristics of the model. There are other possibilities for the man behind the camera, of which R. E. Weeks' portrait of a man is an example of high merit. In this case the subject demanded a certain amount of strength, which, under the manipulations of the average photographer, would have resulted in a hard negative, full of detail and strong contrasts. But Mr. Weeks' interpretation of the man's forceful character is accomplished without resorting to harshness; the full strength of the face is brought out by strong modeling in light and shadow, sufficiently subdued to produce a harmonious whole without sacrificing the plasticity of any part. At the same time he has succeeded in rendering that fleshy texture of the face which seems so difficult to obtain.

The complete artistic success of Rudolf Eickemeyer's "An Idyl of Spring" is somewhat marred by the lower portion of the picture, which, on account of its spotty appearance, distracts the eye and prevents us from fully enjoying the great beauty of the head, with its lustrous eyes and great wealth of dark hair.

This fault is successfully avoided in Louis Fleckenstein's "Dreaming," where a similar arrangement of the hair softly frames and partially shades the face of the dreamer, a strong light falling on the upper lip and the nose, while the rest of the picture seems wrapped in the quiet of night. In the print before me the light is possibly a little too intense, the contrast therefore too strong to be entirely pleasing; but one cannot remain oblivious to the poetic charm of the pic-



D. H. BROOKINS

FAITH OF THE PROSPECTOR
SALON CLUB OF AMERICA

ture in spite of this little accidental flaw, for in conception and workmanship it bears the unmistakable stamp of genuine art and places its author in the front rank of his co-workers.

The artistry of Mr. Fleckenstein is further evinced in the picture to which, unfortunately, he has given the title "Peek-a-boo," the discovery of which gave me quite a shock, for when first seeing the picture I hailed it as a Madonna.

Perhaps, on second thought, one would find it a little lacking in religious sentiment and dignity to warrant the sacred title; but, in spite of a few disturbing spots and streaks, it has enough of the sublime charms of motherhood to command a more dignified title than the one chosen. Were the picture mine, I should ask permission to simplify the background, and call it what I pleased. A similar proceeding I should institute with the same artist's "A Stagnant Pool," which as a landscape photograph appeals to me strongly and might be called by a more odoriferous name. Am I too sensitive?

In spite of its title, Jane Dudley's "A Child of the Faith" does not breathe the religious sentiment of Mr. Fleckenstein's picture referred to. Still, in its composition, its arrangement of light and dark, it fully meets high artistic requirements.

Gertrude Man's "Feast of the Immaculate Conception" is a noteworthy artistic achievement. Miss Man has had many years' training as an artist, otherwise she could not have accomplished with the camera what she did in this picture. I doubt whether it was altogether due to accident that the distribution of the light-masses is strongly suggestive of a cross without being painfully evident of premeditation; which is to say that Miss Man has solved a difficult problem of composition in a highly satisfactory manner.

Composition and tone-quality are admirably treated in the landscapes of John Chislett. "A Dreary Day" is notable for the excellent success achieved in both requirements for a good picture. If we consider how seriously handicapped is the landscape photographer respecting composition, a picture like this is all the more remarkable. There is absolutely nothing an artist would feel obliged to alter in the arrangement of lines or grouping of trees; there is nothing to eliminate, nothing to add. You will say that nature happened to present a perfect picture at this particular spot. This is true; but it takes an artist to find it, and to determine at what time of day, at what season and under what conditions of lighting it will present the proper aspect for a successful camera-picture.

The Sweet Brothers owe their success in landscape photography to most deliberate preparation, often finding on a summer's evening a *motif*, which, they conclude, will make a good picture some fine winter morning. In portraiture they are no less painstaking in trying to obtain artistic results, and they do not find it necessary to ignore these in order to satisfy their customers.

Pure delight in artistic qualities produces such work as Sara Holm's "Decorative Arrangement" and Carl Rau's "Grief." Though differing widely in subject, they both resort to an arrangement of lines and masses in order to give expression to their conception, Mr. Rau, in addition, depending on a subdued tone as the proper atmosphere for his sombrous subject.

J. H. Field's "Winter Morning" is quite convincing in its truth to nature, and is a pleasing piece of modern genre, although the four panels produced by the tree and the posts of the porch seem a little too much in evidence.

Among the landscapes William H. Zerbe's "Shaded Waters" deserves attention. It is happy in composition and more than satisfactory in tone-quality.

Great skill is displayed in the treatment of the foreground, where much detail is suggested without becoming obtrusive, showing the true feeling of a painter.

This is no less true in C. F. Potter, Jr.'s, "The Birches." The manner in which he avoids rendering the glare of the white bark, which to the average photographer constitutes the principal charm of a birch-tree, shows Mr. Potter possessed of the true artistic instinct, which enables him to avoid crudities in nature.

Who would not be reminded of Millet's "Man with the Hoe" in looking at D. H. Brookins' "Faith of the Prospector"? Here we have the type of the Western miner, whose dogged perseverance in the monotonous daily labor may or may not result in a rich harvest in the end; who can say? The story-telling quality of the picture is, however, not its chief merit. It is admirable in technique and well composed, the treatment of the landscape enhancing the value of the figure as the main feature of the picture.

Thus it will be seen that the work of the members of the Salon Club above all excels in artistic qualities. The photographs here reproduced are taken at random with the purpose of giving a fair idea of the average, and to illustrate in what manner these qualities can be obtained by means of the camera, when the manipulator's mechanical skill is governed by an artistic spirit. There may be as many individual methods of the brush, and, as in the painter's art, the vagaries of to-day may constitute the reigning style of to-morrow. There can be no doubt that artists are greatly indebted to photography as an aid in their observation of nature, while photography is still more indebted to art; for only through her has it been enabled to develop from a mere recorder of dry facts into a means of expression, holding as such a unique position, the importance of which is still a matter of contention. We may safely leave it to a future generation to render a final decision, and meanwhile enjoy the present results of camera-work to the best of our individual capacity. To do it thoroughly we must approach it in the same broad and liberal spirit that allows us to appreciate the work of the literalist and the impressionist alike. It is easy to condemn a piece of work we do not like, but that may prove very unjust and sadly reflect our incapacity to grasp the artist's intention. Before we understand this, it is rather presumptuous to attempt a verdict. The writer is led to these observations by some remarks overheard at various times in art exhibitions, and, more recently, at the Photographic Salon. It would seem to be the general rule that people go to exhibitions not so much with the intention of learning something about art, but for the purpose of displaying their knowledge of the subject and of photography. They believe they know a good deal. It is, therefore, more difficult for the photographer to establish his claim to recognition as an artist than it would be for even an inferior painter. Nevertheless, the photographer's mission is a grateful one and his labors in the cause of art are bound to gain in importance and to be increasingly appreciated by all lovers of the beautiful.

The Salon Club is certainly doing splendid work in art education by its annual exhibitions; could there only be more of them!

Pyro-Metol for Plates

PHIL M. RILEY

THERE has always been more or less discussion between the advocates of the old developers and of the new, and it promises to continue to a certain extent for some time to come. The argument appears to be chiefly between the professional or the advanced amateur, who swears by his old-time friend and constant companion, pyro, and takes pleasure in scoffing at the new developers as fast as they come out, and the beginner, who is constantly changing from one thing to another in a frantic effort to keep up to date. The only possible reason for this discussion is the fact that nearly every photographic worker, whether amateur or professional, never looks farther than his own circumscribed horizon of very small radius, wherein he is the self-constituted court of last appeal on all subjects pertaining to the craft.

It may be safely stated that there is no one developer which is the best to use under all circumstances. Every developing-agent has its advantages, its disadvantages, its particular and peculiar characteristics and limitations. Every one of them will yield a good negative under the right conditions, but each goes about producing it in a slightly different way, and so under certain circumstances one will do the work more naturally and therefore easier and better than the others. Thus the new developers, as well as the old, have characteristic advantages which should receive the serious consideration of professional and amateur alike.

Although hydroquinone, adurol, ortol, glycin and other agents are much advocated, any discussion of developers seems to bring a comparison of the merits of pyro and metol to the fore. Pyro is a developer which is hard to supersede, and, in fact, it has not been superseded by any agent which will do anything it cannot do; but it has been displaced by agents which will do some things so much easier and quicker that they are worthy of due consideration. Personally, I believe that every developer has its place in the dark-room for a special class of work, and for that reason I always have three or four kinds ready at hand. The ease and facility of a process must be considered along with the actual possibility, and although I have no great desire to annihilate time, it seems useless to waste forty-five minutes developing an under-exposed plate with pyro just because it can be done, when the same result may be obtained with metol in about ten minutes. Workers become too easily satisfied with one developer, whether it be pyro or one of the newer agents, because it can be forced to do what they wish it to do, when there are developers which would do the same work easier, quicker and often better because of a natural tendency to produce the very result desired.

This contention between the advocates of pyro and those of metol suggests trying the middle course of using both in the form of a combination developer. The idea was suggested by the manufacturers soon after metol first appeared upon the market, and the experiences of many well-known photographers both in



WM. H. ZERBE
SHADED WATERS
SALON CLUB OF AMERICA





ELIAS GOLDENSKY

A FANTASY

this country and England attest the excellence of the formula given in this article. It is of course a question open to discussion whether there is really any advantage gained by combining different developing-agents, but my own experience with such combinations has been very satisfactory and pleasing, especially with eikonogen-hydroquinone, pyro-ortol and pyro-metol.

It must at once become evident that the value of the combination is almost entirely dependent upon the opposed nature of the qualities possessed by each of the agents used. Both pyro and metol have a natural tendency to produce negatives quite different in character and printing-quality; therefore, by compounding them in the proper proportions almost any desired result may be obtained. To fully comprehend the advantages of such a method, however, involves a consideration of the characteristics of the two developers in question.



J. H. FIELD

WINTER MORNING

Our old friend pyro, as most advanced workers know, is one of a group usually spoken of as "hard-working" developers, in which are also included such agents as hydroquinone, pyrocatechin and adurol. The chief characteristic of these is that they develop the image step by step according to the varying amount of light-action in different parts of the film. Density and detail are acquired gradually as the process goes on, development being in rather than on the film, so that the natural tendency is to produce density of the high-lights somewhat faster than detail of the shadows. Such agents tend to produce brilliant, vigorous and somewhat contrasty negatives and are, therefore, especially adapted to over-exposures, which would otherwise result in too flat negatives, and to normal exposures when contrast is advantageous to the best rendering of the subject. If the plate has not received a full exposure, the great tendency is for the high-lights to become clogged before the details have been fully brought out in the shadows. This tendency renders the agent quite undesirable for under-



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RUDOLF EICKEMEYER

AN IDYL OF SPRING

SALON CLUB OF AMERICA

exposures. In the hands of an expert it may be modified so that fair negatives will result from long development; but the average amateur does not care to bother with these technicalities, and to properly modify a pyro formula to fit under-exposure, at the same time keeping the nice balance which is necessary between the developer and the plate used, requires considerable knowledge, experience and skill.

The newer agent, metol, is one of the group of faster "soft-working" de-



GEORGE T. POWER

EVENING

velopers, in which are also included rodinal, eikonogen and amidol. With metol all the details of the image appear almost at the same time and are quickly buried, but this is only surface development and the density is only apparent. Development seems to be on rather than in the film, and real density is acquired more slowly as compared with the time required for appearance of details than with pyro, although the actual duration of development is much less. As a result, the reducing-action tends to produce soft negatives and in cases of over-exposure flat negatives unless development is restrained. Thus it may be seen that this group of reducers is especially adapted to under-exposures and normal exposures where soft negatives are desirable for the best effect. These characteristics render metol a fine developer for snap-shot work and some classes of portraiture. Owing to the fact that with metol all of the details come out so quickly and before the

high-lights have a chance to clog, very short exposures are possible; in fact, one-half the exposure required if pyro is to be used will often be found sufficient. This is an advantage not to be neglected, and it will be found especially advantageous when views must be made on cloudy days. When metol is combined with pyro the exposures may sometimes be reduced one-fifth, and even at times one-fourth.

From the hasty review in the two foregoing paragraphs it may be seen that the characteristics of these developers are radically different. The "hard-working," density-giving agent, pyro, the action of which is principally *in* the film, has been contrasted with the "soft-working," detail-giving agent, metol, the action of which is principally *on* the film. By combining these agents so that they may work harmoniously side by side, the metol primarily to furnish detail and the pyro to furnish density, the peculiar advantages of each may be secured to any desired degree, according to the proportions used. Thus if the larger proportion is metol the negative will tend to be soft, while a larger proportion of pyro than of metol will give somewhat contrasty results. For general use very nearly equal parts of the two has proved itself the best developing-solution; but the pyro should usually be slightly in excess, so as to secure sufficient brilliancy, especially if over-exposed plates are to be developed.

Many good formulæ have been published in times past, but, nevertheless, I wish to give here a formula the workings of which in the hands of beginners and advanced amateurs has come prominently to my notice. I cannot recommend it as my pet formula for all kinds of work, for I have no such formula, believing as I do in the use of several different developers for varied classes of exposures; but I can say that it has given me good satisfaction for ordinary work, especially with instantaneous exposures or wherever there is any tendency toward under-exposure. For high-speed work and winter scenes it is excellent. Moreover, I firmly believe, in consideration of the work which has come to my notice, that in the hands of an average amateur this pyro-metol developer will yield more good-printing negatives from a collection of plates varying in exposures and subjects photographed than would probably be obtained with either pyro or metol alone. The formula I have used is as follows:

IMPERIAL STANDARD FORMULA.

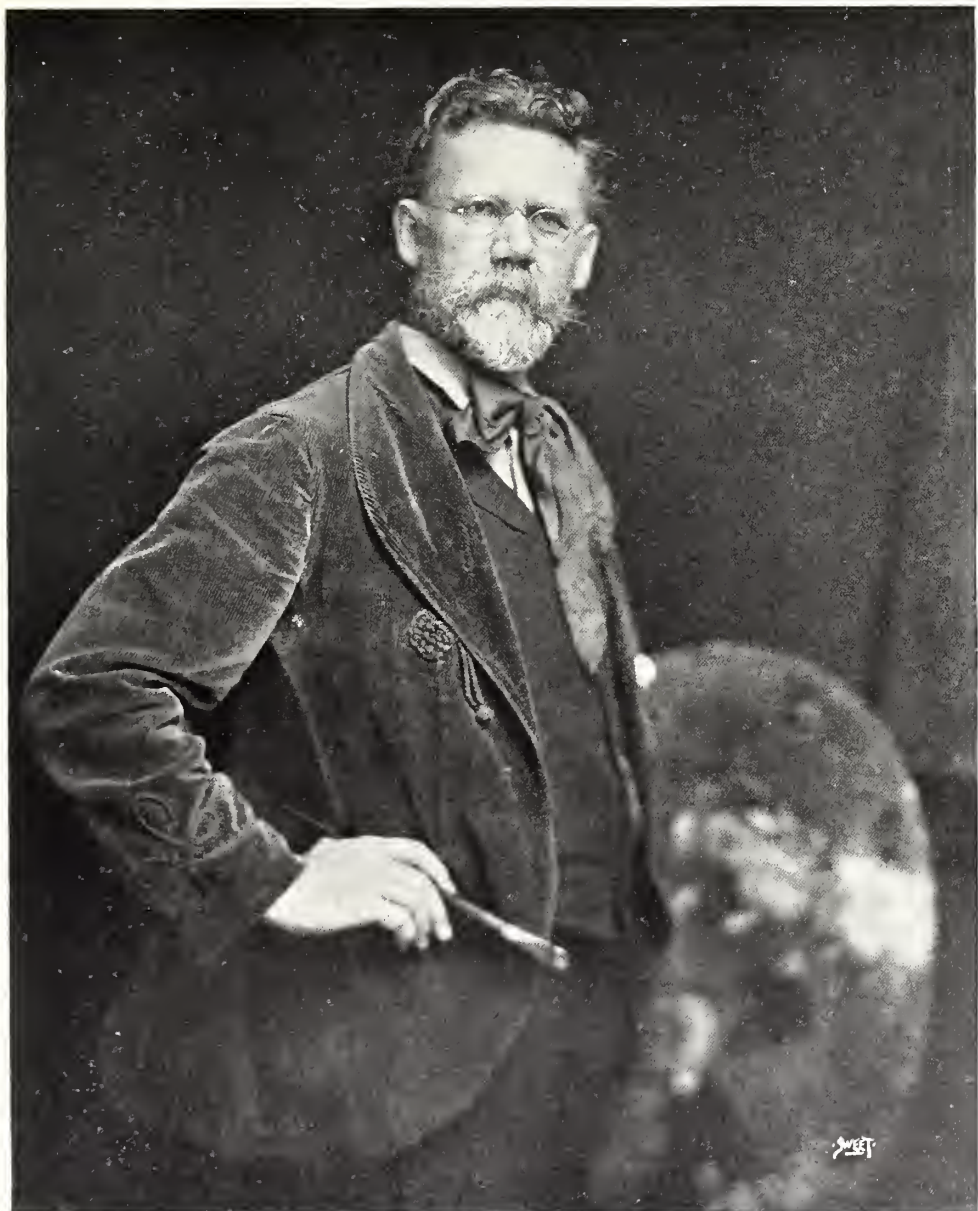
Stock Solution A

Warm water	20 ounces
Metol	45 grains
Potassium metabisulphite	120 "
Pyro	55 "
Potassium bromide	20 "

Stock Solution B

Cold water	20 ounces
Sodium carbonate (crystals).....	20 "

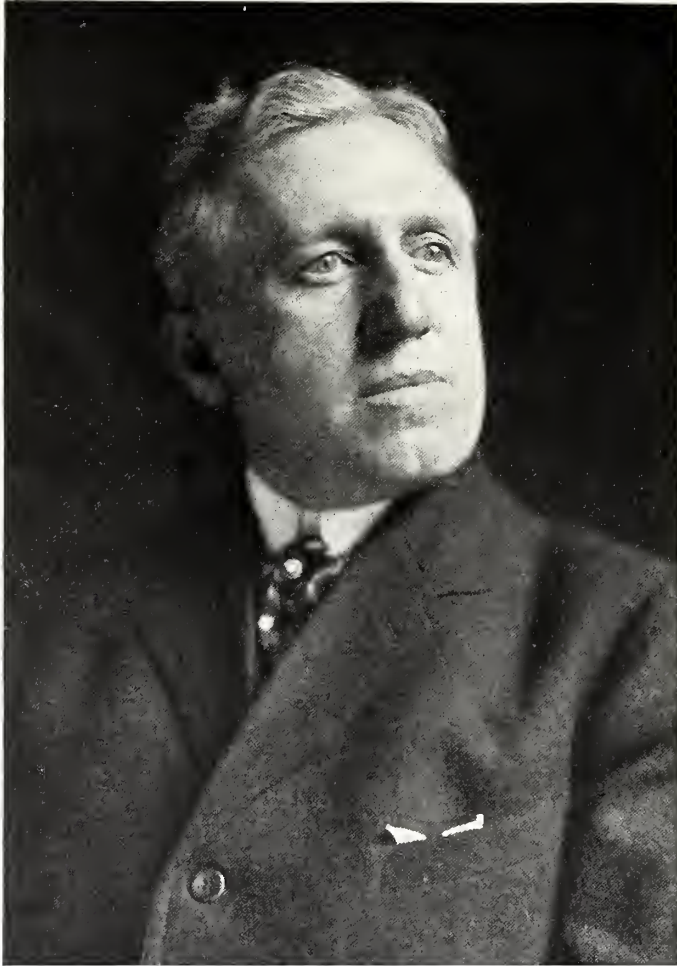
It is always desirable to use distilled water in compounding developers if possible, and where this is not available the water should be boiled and filtered.



SWEET BROTHERS
ROBERT KOEHLER
SALON CLUB OF AMERICA



SALON
CLUB
OF
AMERICA



ROBERT E. WEEKS

MR. J. E. W.

Metol is not readily soluble in cold water and so it is best dissolved at once after boiling and filtering and before the water is allowed to cool. Do not add the other ingredients of Solution A until the water is cold, and then be sure to do so in the order given in the formula.

For use take equal parts of A and B. If factorial development is to be employed, the factor is 9. This formula should yield brilliant-printing negatives, which may be snappy or soft, as desired, by the addition of more or less water. A small quantity of water will doubtless be needed in summer and the developer should also be diluted if it works too rapidly as a result of local conditions such as temperature, also if the high-lights develop too dense, or if under-exposure is anticipated and detail is desired without marked contrasts. One ounce of A,



C. F. POTTER, JR.

SALON CLUB OF AMERICA

THE BIRCHES

one ounce of B and two ounces of water is a good solution for under-exposure, portraiture and unusually soft results, and will about double the normal time of development. For anticipated over-exposure take two ounces of A and one ounce of B, using ten per cent potassium-bromide solution as needed.

This developer yields slightly yellow negatives, a great advantage in cases of under-exposure. If less color is desired — that is, a blacker, quicker-printing negative — add ten grains of sodium sulphite crystals to each ounce or two of developer. As there is a slight loss of apparent density in the fixation of negatives developed with pyro-metol, the worker should, therefore, obtain slightly more apparent density than he actually desires.

Ozobromes from P. O. P. Prints

ERNEST ELDER

ALL the published articles dealing with the Ozobrome process which I have read have been limited in their reference to the use of bromide or gaslight papers as the means of producing Ozobrome prints. It does not appear to be generally known that this limitation is unnecessary, and that P. O. P. prints can be used to give equally satisfactory results. Although for enlargements bromide paper will hold its own, it seems to me that for smaller prints P. O. P. offers many advantages. Not only is the image visible during the process of printing, but control by means of shading and sunning down and combination-printing are easily carried out to obtain any desired effect. Enough has already been written about the Ozobrome process to render unnecessary further reference to the ordinary method of procedure; and I will confine myself in this article, therefore, to such points as are necessary in dealing with P. O. P. Ozobromes may be obtained both by the "transfer" and "non-transfer" methods from P. O. P. prints:

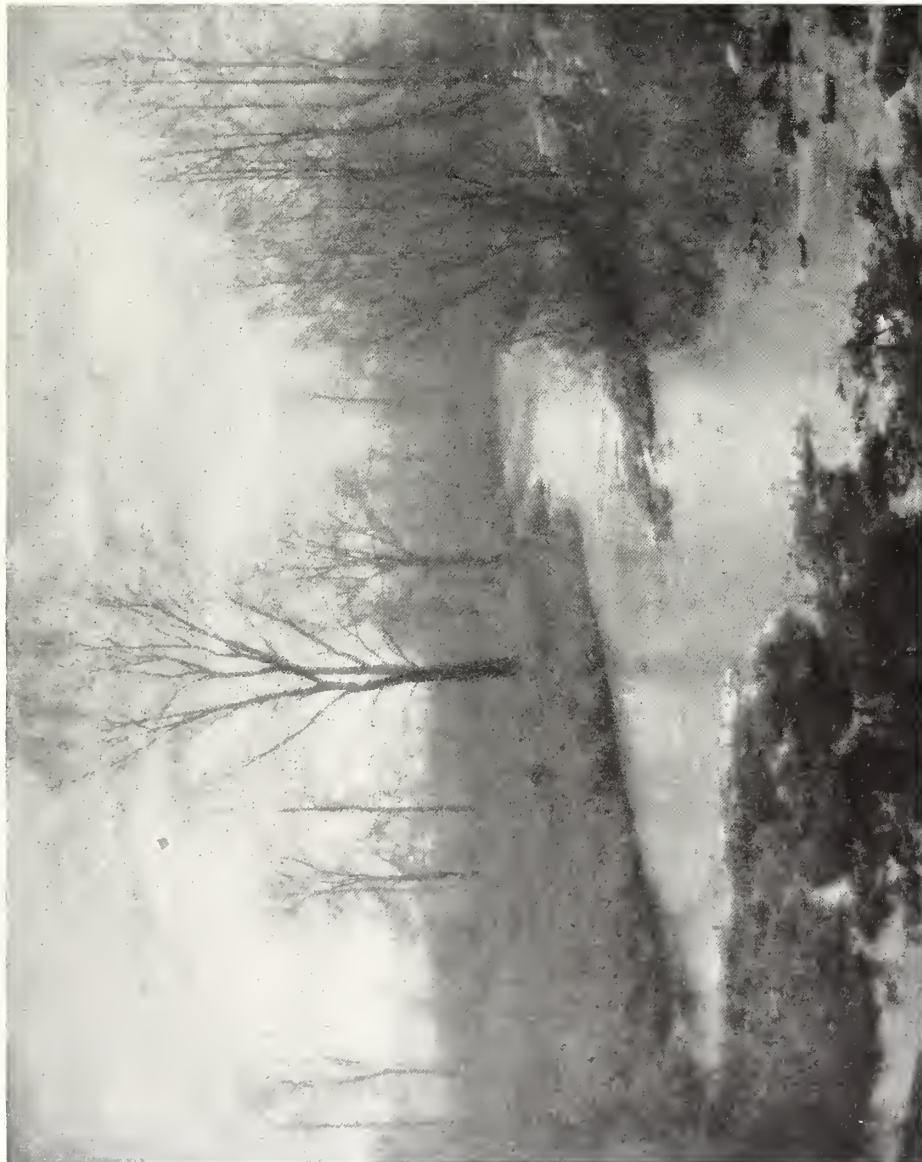
(1) Unfixed. (2) Fixed. (3) Unfixed (gelatine) self-toning P. O. P.

In the first case, that of the unfixed print, the P. O. P. print after removal from the printing-frame is thoroughly washed to remove the free silver, and then, after being hardened by immersion for five minutes in ten per cent formaline, is washed for fifteen minutes. There is not much advantage to be gained by using unfixed prints for the transfer method, because in such a case it is not possible to redevelop the bleached image to its original state. But it is preferable to use unfixed prints for the non-transfer method, and to clear away the partly bleached image with Farmer's reducer.

Prints to be fixed should be printed deeply, fixed in a hardening and fixing bath composed of water, twenty ounces; hypo, three ounces; potassium metabisulphite, one-fourth ounce; chrome alum, one-fourth ounce; and then thoroughly washed to remove all the hypo. These fixed prints are equally suitable for either the transfer or non-transfer method. If used for the latter method, the partly-bleached image may be removed by Farmer's reducer, or it may be redeveloped and toned. Rodinal and metol-hydroquinone are very suitable developers for the purpose. After fifteen minutes' washing, the print may be toned in a bath composed of twenty per cent solution of sodium sulphide, three drops; water, one ounce. In the case of weak Ozobromes, this toning of the underlying image greatly adds to the richness of the finished print.

If the fixed print is to be used for the transfer method, it is only necessary to wash it for fifteen minutes after separation from the Ozobrome tissue; and, after redevelopment, it is again ready for making another Ozobrome. The bleached image redevelops up to, but not beyond, its original strength. It may therefore be left in the developer without fear of its being over-developed.

Prints on gelatine self-toning papers that have not been fixed may be treated



JOHN CHISLETT

SALON CLUB OF AMERICA

A DREARY DAY

exactly as described above for the treatment of unfixed prints on ordinary P.O.P. Fixed prints on self-toning papers are of no use, owing to the toning-action of the gold contained in them. Collodion papers are equally of no use.

The statement has been made above that it is not possible to redevelop an unfixed print; perhaps I ought to qualify this by saying that so far I have failed to do so myself. At the same time, I have an idea that this should be possible. If so, the use of this method will be greatly increased, owing to the saving of time effected by obviating the long washing necessary after fixation. I tried only one and this was not successful. — *Photography, London.*



A Handy Print-Mounting Guide

I. W. BLAKE

THE manner of placing a photo-print upon its mount may make or mar the attractiveness of the finished picture, to a marked degree. The print itself may not be trimmed perfectly true, or it may dip at one end, or it may not be centered correctly. To attach a print properly, and to do it easily and in the shortest way, is not easy, especially where the mount is large and the print is small. It was while wrestling with just such a problem that this mounting-guide was evolved by the writer.

Assuming that we have a print and its selected mount before us, we shall need a pattern of this mount, or, in other words, a duplicate in size and shape. To get this, we simply lay the mount upon a suitable piece of smooth, heavy wrapping-paper, and mark around it with a pencil. Cut this outline with scissors, and we shall have our paper pattern or duplicate. Across the face of this pattern draw two lines—using a ruler to ensure accuracy—one line extending from each upper corner diagonally down to its lower opposing corner; and where these lines intersect will be the center. Make a dot there.

Now, make a paper pattern of the print itself, that is, of its outline—marking and cutting the same as for the preceding, although the paper used need not be so heavy as with the former. Fold this print-pattern its long way, first creasing the fold sharply; then open the paper, and fold it again, this time the short way. Open the paper, and at the point where the folds cross each other stick a pin upright. Now, lay this print-pattern upon the mount-pattern so that the pin in the former comes directly over the dotted center of the latter. Push the pin through, then swing the print-pattern around on its pin-pivot until the long edges of both patterns run in the same direction. Make a few dots along the top, bottom and each side of the print-pattern, thus marking its location on the mount-pattern upon which it is lying. If the print-pattern is stiff enough to keep its shape, its full outline may be traced; otherwise, lay it aside, and complete the rectangle by drawing with a T-square two vertical and two horizontal lines



GERTRUDE E. MAN

FEAST OF THE IMMACULATE CONCEPTION
SALON CLUB OF AMERICA

through the dots already described. The rectangle thus made should then be squared accurately at each corner, so that its outline will be true.

We now have the mount-pattern with a rectangle in its center, the exact size and shape of the print-pattern. This rectangle is to be cut out carefully with sharp scissors, leaving a hollow center surrounded by a stiff paper frame, which frame is to be our mounting-guide.

To use this guide-frame we lay it upon the face of the real mount, all edges even. Slip elastic bands around the ends, if necessary, to keep the frame from slipping, and then run a line of faintly penciled dots around all four sides of the opening, marking these, of course, upon the face of the mount lying beneath. Then lift off the frame, and paste the photo-print to the mount in accordance with the dotted lines.

As will be understood, any number of these guide-frames may be made for convenience in the quick centering of prints without the trouble and eye-strain of measurements. They may be made from thick paper for temporary use, and from cardboard for most lasting purposes. The opening need not compel the placing of the print in the center if preferred elsewhere, for the frame may be slipped about, either higher or lower, or to one side. The only point to be observed is to have, always, the opening exactly square to the edges of the mount.



F. E. BRONSON
STUDY OF A HEAD AND HAND
SALON CLUB OF AMERICA



The Photographic Equipment of a Sub-Arctic Exploring Party

OSCAR VON ENGELN

IN the spring of 1906 I was invited to accompany an Alaskan expedition, led by Professor Tarr of Cornell University, and a member of the U. S. Geological Survey,* which had for its object a reconnaissance of Yakutat Bay, and the crossing and exploration of the Malaspina Glacier, from east to west; a journey over ice along the foot of the Mount St. Elias range of mountains of about one hundred miles. On account of much crevassed ice, it was found impossible to complete the trip as planned, but much valuable geological material was obtained.

The photographic work of the expedition and the selection of the necessary outfit was given into my charge.† On consulting the works of the various Arctic explorers, such as Peary, Nansen or Abruzzi, who had Sella, the great Italian mountain-photographer, with him when he climbed Mount St. Elias, and since returning, Mr. Fiala's recent volume, all of whom had worked under more or less similar circumstances, I was surprised to find that they had either contented themselves with such equipment as is regularly supplied the trade, or if they had any specially designed apparatus, a description of it had been omitted from their works, as had also any detailed account of their photographic experiences and difficulties. Consequently, it was possible to guard against only such troubles as could be anticipated. Moreover, the conditions were different in that these men all had a ship or some permanent base, whereas in this case it was necessary to pack all supplies and camp-equipment from station to station on men's backs.

Thus a first requisite was as compact an outfit as possible, of the right shape for comfortable packing, and as complete as might be without being too heavy. In connection with the matter of completeness, we may well note here the range of photography called for on an exploring-expedition such as this. The first care of the leader is the geography and topography of the country he is to traverse. For this reason the most suitable elevations of the route are climbed, and from these points the advance is planned, and the photographic records are made. Moreover, in a country of prominent peaks, such as this afforded, photographic surveying is much practised; and the accuracy of this class of work depends primarily on having the camera perfectly level while the pictures, in most cases panoramas, are taken. Tripods with special leveling-adjustments, and of the most solid type, even though lightness must be sacrificed to get this, should be secured for this purpose. The general work of this kind is done with a lens of

*Published by permission of the U. S. Geological Survey.

†The author is indebted to Professor Tarr for permission to use the photographs accompanying this article, and also for many practical hints, the result of his previous Arctic experiences.

ordinary focal length, but often some particular feature is of especial importance, and a photograph of the largest possible scale is demanded and the object is most frequently at some distance. A telephoto lens is therefore needed. On the other hand, the side of a narrow valley must be photographed, or the relative position of two widely-separated points accurately recorded by appearing in the same negative; and a wide-angle lens is required. Of course, there are in addition all sorts of photographic possibilities, portraits of natives, of plant and animal life; in fact, everything of which a photograph is of scientific value.

After a careful consideration of all points, the Pony Premo No. 7, 5 x 7 size camera, possessing a long bellows-extension and a method of quickly dropping the front-bed out of the way when using the wide-angle lens, seemed best suited for the purpose. The wide-angle lens, a Zeiss Protar, was not fitted with a shutter, but was of just the right focal length to be used with a focal-plane shutter, when the latter was fitted on the rear of the box. For regular work a Goerz Series 3, Number 2, lens was used.

There remained the question of a suitable telephoto equipment. I tried several makes of telephoto attachments, but all of them were open to three serious objections, considering the trying climatic conditions of Alaska. In the first place, their great weight, plus the weight of the regular lens and its mounting, especially when exerted through the long lever-arm or the extension-bed when pulled out to its full length — as was necessarily the case when it was in use — was enough to make the whole front-bed sag considerably, and, moreover, disturbed the center of gravity of the camera when set up on the tripod; so much so as to make the whole very unstable, and in this condition the slightest wind would cause vibration, and consequent movement of the image. Both these difficulties could have been overcome, in some measure, by using the tripod-socket of the front-bed, but this would involve a laborious readjustment each time one wanted to change from either of the other lenses to the telephoto. Secondly, the focal apertures were very much reduced by all these attachments, so that the slight illumination made it difficult to focus, and, moreover, necessitated long exposures, with again the consequent danger of a blurred image if the slightest wind be moving. It is a point often lost sight of by photographers that the slightest vibration of the camera is of infinitely greater consequence than a much greater movement of the subject. The last objection is the difficulty of focusing sharply, as with some of the attachments a movement of the lens over a range of an inch will produce no apparent change in the definition, as well as this can be judged by the dim illumination of the ground-glass which the small aperture affords.

Now the size of the image made by a lens is directly proportional to its focal length. If, therefore, a lens could be had with three times the focal length of the regular Goerz seven and one-half inches, an image three times as large would be formed, and this would be ample. Such a lens of rapid rectilinear type, to cover a 5 x 7 plate and working at an aperture of about $f/16$, seemed an eminently feasible proposition from the practical point of view; but on consulting



PANORAMA OF THE TURNER GLACIER

TAKEN WITH A LONG-FOCUS LENS



PANORAMA OF THE TURNER GLACIER

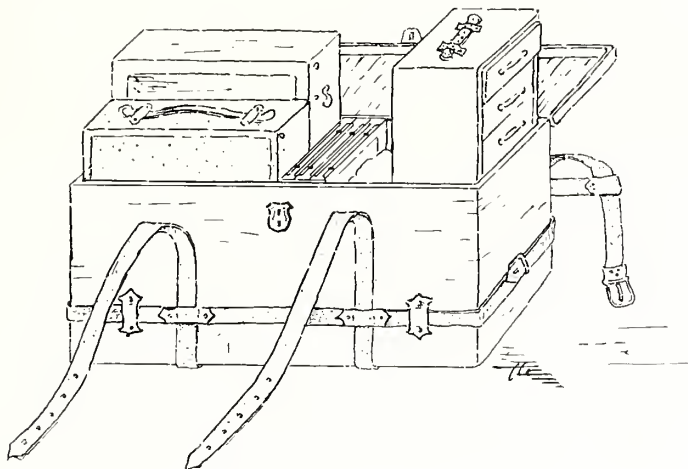
TAKEN WITH AN ORDINARY LENS

various lists, I could find nothing of this kind catalogued. The Bausch and Lomb Optical Company wrote that such a lens would be practical with a working-aperture of $f/20$, equivalent focus twenty inches, but that it would have to be made specially, at a price of twenty-five dollars. In due time the lens arrived, and its use was positively a delight. Any one who has been disappointed by the manner in which the lens of a six and one-half to seven and one-half inches focus flattens out an apparently rugged sky-line will appreciate this. At the same time the ground-glass was amply illuminated, and the lens with its shutter did not weigh one-third as much as a telephoto equipment. The panorama and the single picture of the Turner Glacier with its mountain background, taken practically from the same point of view, the single one with the Goerz and the panorama with the long-focus lens, illustrate the difference in size very nicely. They also show the necessity of a ray-filter in depicting the gleaming white, snow-clad summits of the peaks against a clear blue sky.

The whole equipment, camera, Graflex focal-plane shutter, the three lenses, the ray-filter, focusing-cloth and three plate-holders, were compactly accommodated in one leather carrying-case, arranged as per diagram, weighing altogether about thirty pounds. The packing-straps are also indicated, and with these, tightly-adjusted over the shoulders, it was possible to carry the camera through the most difficult underbrush and up steep mountain-slopes, with practically no hindrance to free movement, except the weight.

We included plates, roll-films and film-packs. There can be no doubt about the superiority of the roll-film for small negatives, taken with the camera in the

hand, and this was used in both Kodaks we took along. The excessive humidity which characterizes the coast-climate of Alaska — it often rains continuously for seven days — was the most difficult condition to cope with. This in lesser degree I have found is a trial which always besets the camping photographer; and to combat this the roll-films can be most conveniently and securely packed in tin, tape-sealed tubes, with a lump of hygroscopic material enclosed. One point not to be neglected with the roll-films is to roll them *tight*, before repacking, after exposure. The manufacturers advise development immediately on exposure, but even after immersion in alcohol it took one roll, which we developed, twelve hours to dry. This, then, is hardly feasible under Arctic or semi-Arctic conditions, when the party is rapidly advancing. The film-packs and plates were more difficult to care for. Both were wrapped in tin-foil and oiled



THE LEATHER CARRYING-CASE

paper, and then packed three and six dozen together in tin boxes. This last was distinctly a mistake. Each dozen should have been packed separately in an air-tight box. Toward the very last of the trip, in fording a waist-deep glacial torrent, an accident occurred, and most of the large cases containing the film-packs were immersed for over five minutes, dented, and consequently enough water leaked in to half fill them. We removed the wrappings, drying the films as best we could, and two months later these were developed, the only defect discernible being a limited number of small transparent spots very similar to air-bells caused by careless development. This shows remarkable keeping-qualities under the circumstances, and the absence of serious damage was somewhat surprising.

The objection to plates is their weight, and the difficulty of providing means to change them. Their keeping-qualities seemed much better, and they were free from the fine, clear lines which often occur on negatives from both kinds of



THE HUBBARD GLACIER

film. The best arrangement for plate-changing is a rectangular, light-tight, rubber-cloth sack, three feet square and about five feet long. With a post in each corner, and the bottom weighted down with boulders, or ice-blocks, one can change plates inside this without fear of fog. This is quite important; for during the summer in the north it remains bright enough all night to take photographs with a short exposure. Such a bag is light and easily transported, and should be carefully protected from rubbing and too sharp folding, otherwise it will develop pinholes which admit light. Avoid plate-changing bags of the type into which one thrusts one's hands. They are of no use except as provokers of profanity.

In the preceding pages I have endeavored to outline some of the simple points about which, although essential, I have always found it difficult to secure



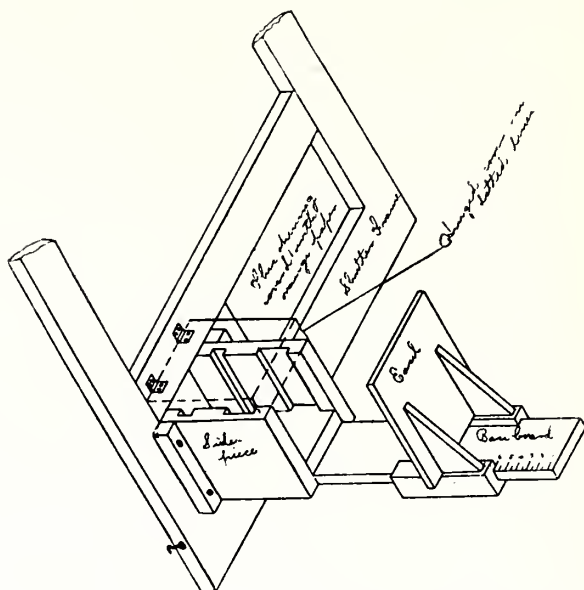
AN ALASKAN MEADOW

information. A compact outfit providing for all situations which may come up, and means of caring for the exposed and unexposed negatives, are problems that almost every camping photographer, in a new country, whatever be his mission, must solve. I might go on and enlarge on personal experiences, as of an attempt to secure a photograph of an iceberg breaking loose from the parent ice-cliff, two hundred feet high, and similar incidents. Alaska is not all an icy waste, however, as the picture of the flower-gay meadow, taken near the sea-coast, will show, and as the three of us who picked two gallons of most delicious, wild strawberries in an hour and a half one day late in August will testify. But this paper is already long and perhaps I may tell the story-part of the photographer's troubles in the north in a future number of PHOTO-ERA. It suffices here to say that the above suggestions should lessen them for the next man.

Daylight Enlarging with a Pocket Camera

E. R. PLAISTED

WHEN I began to make bromide enlargements with a Folding Pocket Kodak, I thought it unlikely I would ever make many of them and not worth while to put much time or expense into making apparatus for this work, and it *can* be done with little besides a table, an empty soap-box and a sheet of black paper to pin over the window. But I had excellent success with even this crude and clumsy outfit. I wanted more enlargements for myself and I had a chance to sell a good many; besides which, I was asked to make enlargements from negatives taken by other amateurs.



Finally, after worrying along a couple of years with the traps above mentioned, I concluded to build something that should be convenient and reliable. As the materials did not cost over a dollar, it will be well worth while for any one who does any bromide work to build something similar; the time saved by its use will soon pay for it, and the results are much more certain and satisfactory. There are no old shawls and other draperies to fall down and let in white light, the camera, negative and easel are held rigidly in line, so no accidental movement spoils a print, and a permanent record is kept of the focus of each negative. This last point is a valuable one, for two reasons: first, the focusing can be done at odd moments, so that when a day with a perfectly cloudless sky comes along, every minute can be utilized for printing and developing; and second, you can duplicate any of your enlargements without going through the trouble of focusing all over again. The two outline sketches show about all there is to the apparatus,

the larger showing the window-shutter and easel-holder, the smaller one showing the negative-frame.

The shutter is made from one-inch planed boards about four inches wide, with mitred joints at the corners. It is covered, except for the portion below the cross-bar, with two thicknesses of black paper. Cheap red felt or flannel cut in strips is tacked or glued around the edge of the side that goes next the window-casing, completely shutting out white light. The whole thing is held in place by a small hook at each corner, leaving nothing to mar the casing except four small brass screw-eyes. The space below the cross-bar is divided by a vertical bar, on one side being the panel of orange paper for a developing-light, and on the other an opening to let white light shine through the negative and camera on to the easel. Two thicknesses of post-office paper make a safe light for developing, and it can also be left on while printing. A hinged wooden shutter falls over the orange light when it is not needed. Also, the ray-screen can be placed over the lens and the bromide paper tacked in position on the easel while the picture is projected upon it; but with the negative-frame shown the picture always falls on the easel in the same spot for a given size of enlargement and so a pencil-line can be drawn as a guide for placing the paper.

Smooth, heavy, white bristol-board I find gives the best surface for focusing, and a sheet of it is tacked over the front of the easel. The graduated scale gives the correct position for a given scale of enlargement (after it has once been found by experiment), and the graduations on the focusing-scale of the camera serve the same purpose in keeping a record of the proper point of focus for each negative. This varies unless the negatives are all made with a fixed-focus camera. The reading of both is recorded in my negative album, and with it I can be sure of getting the focus always perfect after having once found it.

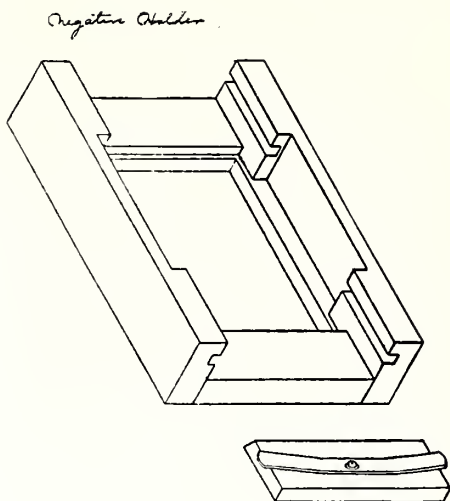
The easel, camera and negative-frame are supported on a baseboard about one inch thick and five inches wide, having two grooved uprights, or side-pieces, at the end next the window. Screws passing through cleats on these side-pieces hold the baseboard firmly to the window-shutter. By fastening it at an angle it can be made to point upward toward a clear sky background and thus do away with mirrors or reflectors outside the window — no small convenience, especially in winter.

The two grooves shown on the inner surface of the side-pieces are lined with the felt, and into the larger is slipped the camera; into the one nearest the window slides the special negative-frame shown in the smaller sketch. Above is a hinged cover which can be quickly raised for removing the frame to change negatives, but which shuts down onto felt padding and keeps out white light around the camera. I fasten it securely with two hooks like those used for holding the window-shutter, as it might get accidentally raised and so fog a print unless this precaution is taken. Human eyes cannot see very well in a pitch-dark room, and with all the care one takes to avoid accidents they will happen often enough.

In putting the woodwork together I placed a strip of felt in most of the joints, then there is no danger of shrinkage opening them so white light can leak

through. The negative-frame shown in the smaller sketch is made very much like a common printing-frame. In it is placed the negative and a piece of ground-glass to diffuse the light evenly. With film negatives a piece of plain glass is used also, and the film placed between it and the ground-glass. These are held firmly in place by the beveled wooden strips at the ends, which fasten with springs the same as the back of any printing-frame, and this leaves the entire "sight" free for light to shine through the negative into the camera, where it is gathered by the lens and projected onto the easel.

Almost any dish will do for washing and fixing, provided it is large enough to let the print lie flat in it. A glass developing-dish is excellent; the developer seems to go further and does not discolor so quickly. The tray should be about



an inch larger, each way, than the size of the print. Exposures of over fifty or sixty seconds are seldom needed, and so it is a good plan to have a small circle of ruby or orange light fall directly on the face of the watch where it will not be in the way. This can be arranged by cutting a hole in the black paper, pasting orange paper over it, and hanging the watch on a hook in the frame close by.

With this method of recording the focus, if a cloudless day is taken for the printing and a test strip used, the element of chance is almost eliminated. You may reasonably expect to get eleven good enlargements out of a dozen sheets of paper, the twelfth being cut into test strips. This makes the prints fairly inexpensive; at least they cost no more than contact-prints of the same size would, and an 8x10 enlargement can be made from a $3\frac{1}{2} \times 3\frac{1}{2}$ negative with perfect detail and sharpness. Also, with this apparatus, you can rig up for work in ten minutes and put everything out of the way in ten more. No tacks to drive, no pins, cloths or other traps. Everything held firmly in its place by a few hooks.—*Photo-Notes and the Bromide Monthly, London.*

EDITORIAL

Advice to Participants in the Photo-Era Contest

OWING to the fact that the reckless introduction of masses of white into a picture, such as garments, hats, bows, table-cloths, tidies — all of white or light-colored material — has a tendency to disturb the unity and harmony of the composition, it is suggested that workers avoid such effects as much as possible. In photographing children it is not a difficult matter to see that they are arrayed in fabrics of quiet colors, which are just as becoming as glaring white, admit of better exposure and easier development and produce more agreeable effects pictorially. This is no less true of ladies, whose passion for white apparel is an historical truth. This point will be seriously considered by the jury of the PHOTO-ERA Fifth Annual Prize Competition, now in progress.

How to Attain Technical Proficiency

THE one pathetic feature of the average photographic prize competition, and to which, almost invariably, the members of the jury pay no heed, is the fate of the rejected prints. Having failed to win the favor of these critics, the discarded prints are pitilessly returned to their owners and there the matter ends. A mere glance at the average rejected print suffices to impress the critical mind with the absence of technical merit. The producer was not proficient in the requirements of the task he set himself. He was inadequately equipped, lacking practical experience and suitable working-tools. It would seem that, in view of the prodigious amount of technical information that is constantly being disseminated, the errors of commission and omission would show a marked diminution. But the editor, to whom hundreds of inferior prints are submitted each week, in addition to artistic achievements, is not disposed to think so. Persons with natural aptitude and good taste have an immense advantage over beginners not thus favored; and yet it is astonishing how much the ordinary person may achieve through intelligent and systematic schooling.

If one stops to think, there is no more reason why a novice in photography should attain success, unaided, than a person desiring to become an accomplished vocalist without competent instruction. How can a casual lover of art, without technical experience, provided only with printed instructions, be expected to make a facsimile of an oil-painting? That person might, indeed, peruse all the books ever written on the subjects of drawing and mixing colors, even watch others paint, and still be no better equipped for the task than before. To accomplish the feat, a course of intelligent, painstaking study under a competent master or in a first-rate art-school is necessary, and even then the required degree of proficiency may not have been reached. This is also true of music and the other

arts. Is there any reason why photography should be an exception? No fair-minded person would answer this question in the affirmative.

Every successful artist has had an instructor. Besides giving the date of the birth of a painter, a sculptor or a musician, the book of reference states the name of his teacher, whether the artist be Bouguereau or Raphael, French or Canova, Paine or Beethoven. But while the ambitious student is acquiring the technique of his art, following the advice, methods and style of his master, he is free to study the works of other artists, past and cotemporary. He will mingle with other art-students, exchange views, and in these and other ways widen the extent of his horizon and, maybe, create a style of his own.

We have in the United States several excellent schools of photography, a two-years' course in any of which would impart to the student an adequate training in all technical operations, especially in the important and oft-neglected department — the portrait-lens. Or, if the beginner prefers, he can undergo a course of tuition with a professional photographer of recognized ability and good character. In addition to this regular work there are several avenues of information open to the student, such as the perusal of standard art-literature; the study of pictures in the art-museum, if such an institution be within reach, otherwise those of the old masters by means of good reproductions; and last, but not least, a continuous acquaintance with the progress of the art by means of standard photographic publications.

The Latest Fad

THE recent important advance made in the three-color process has placed in the hands of the photographer an interesting plaything — the Autochrome plate, the method of manipulation of which has been thoroughly explained by the photographic press. It is not at all surprising that the successful treatment of this new color-plate calls for the highest degree of technical skill, which circumstance accounts for the numerous failures on the part of the general practitioner. The necessarily high cost of the article has deterred many workers from experimenting with it; but well-known experts, including F. J. Mortimer, R. Child Baily, F. M. Steadman, Eduard Steichen and others, who have investigated the merits of the Autochrome plate, appear to have been entirely successful, proclaiming the fact through the medium of the photographic journals or the daily press.

In spite of its exorbitant price in the United States, largely due to a high import duty and transportation charges, the new plate will enjoy a period of popularity and, sharing the fate of other novelties, will be quietly shelved. It is regrettable that the new color-plate is still in the experimental stage, for the final result is confined to a glass-positive. As the success of any commercial article promotes competition, it is quite probable that rival plates, similar to Lumière's, will soon be on the market. In that event the prices of autochromatic plates may be lowered sufficiently to enable one and all to form the acquaintance of the sensation of the year.

THE ROUND ROBIN GUILD

Conducted by ELIZABETH FLINT WADE

A department especially designed for the amateur photographer and the beginner, in which information, advice and criticism will be freely given. Membership may be obtained by sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, Mass.

"Leaves is changin' overhead
Back from green to gray and red,
Brown an' yellor, with their stems
Loosenin' on the oaks an' elms,—"

sings the Hoosier poet, and then he sighs and says he "loves Old October so, he can't bear to see her go."

But October has come, and though we all dislike to see her go, go she must and will. But while October is with us let us make the most of this carnival month of the year. The harvesting is over, and it is not yet time to gird ourselves for the winter's rigors. Nature is letting the earth go its own way. All the pretty wildwood and wayside things are sending their white-winged seeds afar to find a resting-place for the winter's sleep. The brooks are only half full of water, and ramble along leisurely, quite ignoring the fact that they ever hurried over their pebbly ways. Great piles of fruit lie in the orchards absorbing the sunshine, to give it out again when the rude North Wind holds sway over the earth.

October is the time to seek sweet country haunts, the time to wander in fields and woods, the time of the year when the camera wisely used produces in the photograph the sense of color. I have before me a beautiful picture, a photograph of October woods. It is toned in a warm brown, and as one looks at it he gets the feeling of color and almost fancies he smells the spicy odors of the weeds and grasses that grow so luxuriantly along the path. The amateur may in this month obtain some of the most interesting of out-of-door pictures, the smoky haze in the air giving a sort of elusiveness to the scene which is very fascinating.

Try pictures of October woods and fields and send the result to the Round Robin Guild.

We have a specially interesting subject for the October competition of the Guild. We expect to see some very unusual pictures in this contest, and artistic treatment will count for as much as technical finish. However, we want the members to do the best they can, both in making the negative and finishing the print. Platinum paper will be found an excellent printing-medium for this style of picture, and the rough papers are the choice of texture. We hope to see some of the prints toned after directions which have been prepared for this number of the Guild department.

The reds and browns will be specially pleasing, and are not hard to manage if one follows the formula closely.

MODIFICATIONS OF PLATINUM PRINTS

THE old proverb, "over and over again, no matter which way we turn," does not apply to platinum prints. One may make a print from the same negative "over and over again," but if his paper be platinum no two prints need be alike either in texture or coloring.

The quality of paper ranges from the transparent Japanese tissue to the very heavy and rough textures of drawing-paper, while the coloring may be varied to suit the pleasure of the worker and the requirements of the particular negative.

Uranium is the chemical most used in the coloring of platinum prints. It is at once the simplest and most versatile of toning-agents. All ranges of browns may be obtained — from reddish brown to dark chocolate. One may obtain clear reds, greens and blues by certain modifications of the toning-solution.

The nitrate of uranium is made up in stock solution, and the other chemicals added when the bath is made. For a stock solution dissolve one ounce of nitrate of uranium in six ounces of water, and store in an opaque glass bottle or wrap the bottle in black needle-paper. The stopper should be of glass; and to prevent oxidation, if the bottle is to be opened at long intervals, it is wise to pour a little melted paraffin over the neck of the bottle.

For a toning-bath for red tones make up a solution as follows: nitrate of uranium solution, one dram; glacial acetic acid, two drams; ferri-cyanide of potassium, ten grains dissolved in two ounces of water; eight ounces of water. After the solution is thoroughly mixed add a few grains of sulphite of soda, or a piece about the size of a cherry-stone.

The print is made and developed after the usual formula in the oxalate of potash solution. It should be printed only deep enough to show the details, as the uranium acts as an intensifier and the print when dry is much darker than it appears in the solution.

In the toning of platinum prints it is advisable to use the porcelain trays, as the bath throws down a precipitate which is hard to remove from anything but a porcelain or china dish.

Always use plenty of the toning-solution. If the prints are larger than the 5 x 8, then use double the quantity of toning-solution given — twenty ounces instead of ten ounces, which is what the above formula makes.

The prints are developed, cleared, washed

and dried before being toned. Immerse the print in the solution face down and turn quickly to obviate the forming of air-bubbles on the surface of the paper. If any should form, break them quickly and flow the toning-solution over the spot.

If two or more prints are to be toned at the same time they must be kept moving or they will tone unevenly. A very good way is to keep drawing the bottom print out from the solution and placing it on top. Thus all the prints will receive the same treatment and the toning will be uniform.

As soon as the desired tone has been reached, which varies according to the time the print is left in the bath, rinse in clear water and place in a clearing-bath made of one-half ounce muriatic acid to sixty ounces of water. They should have two changes of the clearing-solution in order to insure pure whites; they are then washed for five minutes and dried. If washed too long the color will not be as clear nor as brilliant.

For chocolate-brown and sepia tones use a bath which has been used for red prints. Let the sediment settle to the bottom, decant off the clear solution and tone the prints in the bath, clearing as in the red bath. The prints to be toned a brown or sepia are printed deeper than for the red tones.

To make green tones which are desirable for certain seascapes, the print which has been toned in the uranium solution is turned to an olive-green color by immersing it in a solution made of fifteen grains of chloride of iron to one ounce of water. As soon as the print has changed to the right tone remove and wash in water in which is a little acetic or citric acid, just enough to prevent the print losing its tone.

The blue platinum print is not often made, but the color is wonderfully fine and for some water-scenes will be found specially satisfactory. It is so unlike the ordinary blue-print that it cannot be compared with it. When made successfully the print is a deep velvety blue.

For a blue print the picture is printed, developed, cleared and toned, the different stages following each other in quick succession. Make the print a little deeper than for the black-and-white, as the detail fades in the toning. Develop in the oxalate of potash developer, clear in the acid bath, using one ounce of muriatic acid to sixty ounces of water, then transfer at once, without washing, to the uranium bath. The print will gradually tone to a beautiful blue, and as soon as toned place in a clearing-bath made of one-fourth ounce of muriatic acid to sixty ounces of water.

Papers coated with sepia solution may be developed for purplish browns by using the following developer: oxalate of potash, two ounces; potassium phosphate, two ounces; citric acid, twenty grains; water, twenty ounces. Heat to 150°F., develop quickly, and immerse at once in a clearing-bath made of one-half ounce muriatic acid to sixty ounces of water. A beautiful red-brown may be obtained by adding sixty

grains of chloride of mercury to the solution before developing.

A rich warm black may be obtained on the black and white papers by making up a stock solution of mercuric chloride. Dissolve one-half ounce mercuric chloride in ten ounces of water and add two and one-half ounces citric acid. The solution should be heated and then filtered. When developing add one-half ounce of this solution to four ounces of the regular oxalate of potash developer. The more of the solution added the warmer will be the color.

To obtain green tints, tone the paper in the uranium bath, and as soon as the color approaches sepia remove the print from the tray and transfer it to a bath of perchloride of iron, made by dissolving one hundred grains of perchloride of iron in ten ounces of water. The print will gradually turn to a green color, and as soon as it is toned evenly place in a bath of weak acetic acid — a dram of the acid to four ounces of water. Let it remain for a minute or two, wash quickly and dry.

The use of chloride of mercury for reddish tones is capable of producing most satisfying shades, though unless care is taken in the thorough washing and clearing of the print the tone, after a while, will deteriorate. However, prints made by the process have had five years of exposure and the color is as good as when first made.

Dissolve one ounce of oxalate of potash in ten ounces of water. When thoroughly dissolved add one-fourth ounce phosphate of potassium; three-fourths drams chloride of potassium; one and one-half drams citric acid; two grains of mercuric chloride. Heat to about 180°F. Clear in an acid bath of one ounce of muriatic acid to one hundred and twenty of water.

In some pictures the effect will be improved if the paper is tinted. This is done by making a strong decoction of coffee and, after the print has dried, immersing it in the coffee. Another way of imparting a tint to the paper is to immerse the print in a weak solution of bichromate of potassium, drying it in the dark, and then exposing it to the light. The paper becomes the color of a time-mellowed engraving, but the picture itself is not affected.

The tinting of the paper is to be commended for portraits where the costume is quaint or old fashioned.

Sometimes a print appears flat after drying. To remedy this brush it over with artists' fixatif, which comes in small bottles and is very inexpensive. This treatment greatly improves the appearance of the print.

There are many more modifications of the platinum process, details of which will be given in a later number.

HINTS ON PHOTOGRAPHING BUILDINGS

IN considering the photographing of a building two things demand special attention — first, the point of view; second, the time of day when the lighting is most suitable for the picture.

These two essentials having been determined — and one needs to choose carefully — the next is the arranging of the subject on the plate. A few feet either way makes a great difference in the aspect.

A picture of a building is much more pleasing if, instead of using all the plate for the building itself, one includes some of the surroundings, and gets a bit of perspective, however small. The foreground must not be ignored. The picture should show that there is an approach to the building, and does not stand on the edge of nothingness, as appears to be the case when the base of the structure forms the lower edge of the picture.

The camera must be adjusted so that the lines of the building are perfectly perpendicular, and to insure this the lens should be a rectilinear. In photographing tall buildings the adjuncts of a swing-back and a rising and falling front are necessary, as, if the camera is tilted to bring the top of the building within the angle of the lens, distortion is the maddening result. A spirit level, or a plumb indicator will be found very useful in ascertaining whether the camera is perfectly horizontal.

In case one cannot get far enough away from a building to obtain a good view with an ordinary lens, a wide-angle lens will be needed, but care must be taken to avoid distortion.

The color and material of a building are points that enter into the consideration of architectural photography; brown stone, brick, granite, marble, wood, etc., all must be rendered in the picture as such, the exposure varying with the material of which the building is constructed, marble photographing very much quicker than a brown stone. Over-exposure will give a flat negative, and the loss of contrast detracts very materially from the picture.

One side of the building should be in shadow, and the morning shadows will give soft effects, much more so than if the picture is taken toward evening, when the light is waning.

If a picture in which all the fine details of the building may be traced is the kind desired, then obtain a very sharp focus and stop down the lens; but if one wishes a soft picture where the lights and shadows blend and give an artistic picture, then the lens should be turned outward just a trifle and a large stop used.

One should always include some of the surroundings of a building in the picture, or secure a street vista or a perspective, even though a short one. Then the picture will be pleasing as a picture as well as a correct likeness of the building photographed.

If a building is at all interesting, it is a good idea to make pictures of certain portions, like a door or doorway, a window, etc. If there are stone carvings, as in the case of handsome public buildings, photographs showing detail of balustrade or coping, window support or lintels, are of additional value, as they give a better idea of the buildings — as if one were inspecting certain portions after first viewing the whole.

BLUE-PRINTS ON WOOD

AN ingenious amateur whose purse would not allow her to indulge in a set of white-and-blue Dutch tiles for her room evolved a very clever imitation by using thin white squares of wood and sensitizing the surface by the cyanotype process, then printing in the same way as for blue-prints.

The wood was first coated with a solution to prevent the sensitizing mixture soaking into the wood. This solution was made of one ounce of gelatine dissolved in ten ounces of hot water, and when cold adding enough China white (water-color) to give it a milky appearance. This mixture was applied to the wood and allowed to dry. The sensitizing solution is the same as that used for blue-prints:

Ferricyanide of potassium, two hundred grains; water, three and one-half ounces, made up in solution. Solution Number 2 is made of two hundred and twenty grains of ferric citrate of ammonia and three and one-half ounces of water. When ready to use, mix equal parts of both solutions and apply to the wood with a sponge or soft brush. The coating of the wood must be done by lamplight and the wood dried in a place free from dust.

When coating the wood, pieces of paper should also be coated with the same mixture. This paper is for the trial print, as the printing on the wood cannot be examined to observe the progression of the print. Make the print on paper, carefully noting the time required to make a good print, and expose the wood for the same length of time.

When printed the wood is floated face down on the surface of the water for a few minutes, and then dried.

Whitewood is a good wood for sensitizing, the grain being very close and the print much better in detail than on a coarse-grained wood.

TONING BROMIDE PRINTS TO SEPIA

ONE of the best methods of producing sepia tones on bromide paper is as follows:

Dissolve ten grains of potassium iodide in as many ounces of water, add one or two flakes of iodine and stir. Immerse the fixed and washed bromide print in the resulting dark, sherry-colored solution and allow it to remain until the image turns a dark blue and finally disappears. Then immerse in

Water	4 ounces
Sodium sulphite	½ ounce

As soon as the blue stain disappears wash and place in

Water	4 ounces
Sodium sulphide C. P.	20 grains

The print must, of course, be thoroughly washed when the toning-action is complete. As the print loses some of its depth in the change of color, it is advisable to develop a little darker than usual.

Monthly Competitions

Closing the last day of every month.

Address all prints for competition to PHOTO-ERA. The Round Robin Guild Competition, 383 Boylston Street, Boston, Mass.

PRIZES

First prize: Value \$10.00.

Second prize: Value \$5.00.

Third prize: Value \$2.50.

Honorable Mention: In addition to the awards, the names of those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be published.

Prizes may be chosen by the winner, and will be awarded in books, magazines, enlargements, mounts, photographic materials or any article of a photographic or art nature which can be bought for the amount of the prize won.

RULES

1. These competitions are free and open to all photographers, whether or not subscribers to PHOTO-ERA.

2. As many prints as desired, in any medium, mounted or unmounted, may be entered, but they must represent the unaided work of the competitor.

3. The right is reserved to withhold from the competitions all prints not up to the PHOTO-ERA standard.

4. *A package of prints will not be considered eligible unless accompanied by return postage at the rate of one cent for each two ounces or fraction.*

5. *Each print entered must bear the maker's name, address, Guild number, the title of the picture and the name of the competition for which it is intended, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.*

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA. If suitable, they will be reproduced, full credit in each case being given to the maker.

SUBJECTS FOR COMPETITION

September — "Sunsets." Closes October 31.

October — "Windows and Doorways." Closes November 30.

November — "Genre Studies." Closes December 31.

December — "Home Portraiture." Closes January 31.

January — "Illustrated Poem." Closes February 29.

February — "Mountains." Closes March 31.

March — "Atmospheric-Effects." Closes April 30.

April — "Decorative Photography." Closes May 31.

May — "Animals." Closes June 30.

INTERIORS WITH FIGURES

WE regret the necessity of announcing that none of the prints submitted in this competition was worthy of award. The work of several members evinced an appreciation of the requirements of the subject and showed that a conscientious effort had been made. Failure was perhaps to be expected, however, for the subject was a very hard one, in fact, probably the most difficult which has yet been assigned for a monthly competition; and, although the Guild includes among its members many workers of keen artistic feeling and resources in ideas, who have successfully competed in difficult contests in the past, never were their abilities so taxed as in the present instance. More than this, the number of entries was unusually small, probably due to the fact that many workers are withholding their best prints for the several annual contests now in progress.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.

ELMER T.—Acetic and citric acid are used for similar purposes in photographic work. The citric acid is considered superior to the acetic acid. These acids are used to clear bromide prints from all traces of iron after they have been developed in a ferrous oxalate developer. A few drops of acetic acid added to the bath in which prints are fixed will change the color of the print.

GAYLORD M. L.—Yes, you can tint transparencies that have been dried by soaking the transparency in water and then immersing it in the tinting-bath. The color will not be as vivid as it would if the plate had not been previously dried, but you will get a very soft and delicate tint.

K. F. D. AND B. NELSON.—I would advise you to use a rough-surface platinum paper for the making of prints from the portrait. As it shows only the head and shoulders and the lighting is so soft you will get a very satisfactory print. Sepia tone would seem to be more suitable for this negative, as on account of the masses of hair and the loose arrangement you will get more lightness and feeling than with the black-and-white prints.

ROSE A.—You may obtain sepia tones on Aristo paper by toning prints in a platinum bath made of chloro-platinite of potassium, two and one-half grains; citric acid, twenty grains; chloride of sodium, twenty grains; water, ten ounces. Wash the prints, then tone till the desired color is reached, then remove at once to a

bath made of one and one-half ounces carbonate of soda and twenty ounces of water. Leave them in this bath four minutes, then fix and wash.

PAUL E. F.—A kit is a small, thin wooden frame about the thickness of a sensitive plate, and fits into the plate-holder. The center is cut out and grooved to admit of using a smaller plate than the size which fits the holder. A kit is of convenience when making lantern-slides in the camera, or when taking subjects which do not call for a full-sized plate.

BERTHA B.—You can dry a plate very quickly by first soaking it after washing for a few minutes in a five per cent solution of formaldehyde, and then drying it by heat. The formaldehyde hardens the films and prevents its melting.

H. J. D.—It is impossible to tell exactly how long to expose a plate when making lantern-slides by contact. The first thing to do is to assort your plates according to density; then make experimental prints on strips of bromide paper, to judge the time of exposure. If you use a good light and do not hold the slide too near you will be able to make satisfactory exposures, as lantern-slides have a good deal of latitude. I should judge that those you have made are very much overexposed, or else they would not be so thin.

JOHN K.—You can reduce the Aristo prints which are much overprinted by taking a used hypo-bath, filtering it to remove impurities and adding to it a few drops of a saturated solution of ferricyanide of potassium. The prints must be thoroughly washed after the treatment.

F. D. S.—The developer used for platinum prints is not spoiled by the precipitation. Turn it into a bottle and let it stand for twenty-four hours, when the precipitate will settle at the bottom and the clear developer may be used over again. Used developer is to be preferred to fresh developer. It gives richer tones and seems to bring out detail better. It can be used over and over again by adding a little fresh solution as its strength becomes exhausted.

CARLOS T.—No, it is not necessary to use a safe edge for gum prints. I think you must have been reading about carbon prints, in which a safe edge is used in order to have a border of white around the paper to facilitate the quick handling of the paper, and avoid injuring the carbon pigment.

S. A. E.—Schlippe's salts are used for strengthening thin negatives, and also for restoring faded prints and negatives when the latter have been acted upon by bichloride of mercury.

SEWARD C.—It is not safe to make up a formula by measuring ingredients by drops, as the drops of different fluids vary greatly in size; as, for instance, it takes sixty-two drops of alcohol to make a cubic centimeter, while of hydrochloric acid it takes only twenty.

A. L. TUCKER.—To spot prints get the spotting-colors that come spread on celluloid sheets. The sheets are held together by a clasp, and there are usually four different tints in a set. With these one can mix any color necessary for the spotting of sepia, brown or black-and-white

prints. Sometimes a soft drawing-pencil will be found to be the most effectual medium for small defects in black-and-white prints. There are certain drawing-pencils made which do not make shiny marks, as do the ordinary lead-pencils. One of these will be found very useful for slight defects and tiny spots on prints.

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.

O. H. R.—Your subject is excellent, well-lighted and well-rendered as to values. The negative deserves a much better printing-medium than the one you have used. It would look specially well in a reddish-brown tone. Cut at least an inch off from the top of the picture. Children are not as easy subjects as one fondly imagines, but you have made an unusually interesting picture, and what you need to do now is to make a print on a better paper and mount it in an artistic manner.

K. M. M.—Your subject "Flower Study" is really not a study at all, but a very good picture of a spray of roses, clear and distinct, and just such as one desires to see in a flower catalogue. Use a tinted background for a similar study, place the branch or spray far enough away from it to give atmosphere, and do not focus so sharply. Use a larger stop, which will give the effect of roundness to the subject.

F. D. S.—Your picture "The Brook" is spoiled by having included the bridge in the view—a bridge which is not at all picturesque and makes a straight line across the perspective. One feels defrauded of the view as well as annoyed at the obstacle which will obtrude itself on the eye to the detriment of the more interesting parts of the picture. I should judge that if you made a negative just the other side of the bridge, looking up the stream, you might secure something worth while. Try an exposure when there are clouds in the sky, as the blank space which represents the sky is very inartistic.

A. S. R.—Your portrait-study is so good that it seems a pity it should be spoiled by the spots of white made by the ornaments in the hair, which are so glaringly white that they are the first thing that catches the eye when looking at the picture. Try covering the two white spots and see what a difference it makes in the picture. If you make a print on rough platinum you can paint out these spots of white on the print and thus your picture will gain very much in artistic value and be more than doubly pleasing.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

Conducted by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to Phil M. Riley, 383 Boylston Street, Boston, Mass.

A SIMPLE WASHER FOR PRINTS AND FILMS

PRINT-WASHING is one of the most trying and uncertain operations which the amateur has to perform. Several contrivances have been recommended from time to time, and most are theoretically perfect; but, like mortals, few live up to their profession. The washer here described is the outcome of practical experiment, and has been found thoroughly efficient in regular use. The photographer will, of course, select a size (larger or smaller) to suit his individual requirement. An earthenware bowl is used, 5 inches deep, 10½ inches in diameter at the top, and holding about a gallon. The inside is glazed and free from any irregular projections which would be liable to injure prints. It accommodates two or three dozen quarter-plate prints or films. A hole somewhat between a sixteenth and an eighth of an inch in diameter is drilled through the bottom. A fish-drainer placed inside keeps the prints about two inches above this point.

After filling, water should be allowed to run into the washer a little faster than the rate at which it flows out through the hole, thus ensuring a sufficient supply. This will not be difficult to regulate.

With this washer prints require very little attention, because —

1. The hypo falling to the bottom, they are practically washed by gravitation, and are not left to soak in water charged with chemicals.

2. They are not damaged by circular or other motion, and the outflow is so gradual that they are not drawn by the force of the water into a compact mass at the bottom of the washer.

3. Very little water need be used, though it is not recommended to economize in this respect where the supply is ample.

This washer is not intended to supersede the familiar rack and tank, but can be used, if desired, for two or three half-plates. Similarly, by placing a stone or weight on the center of the drainer, five quarter-plates can be arranged round it without injury. In remote districts where the scullery tap is non-existent, a smaller bowl, holding four or five pints, will take a dozen quarter-plate prints, and can be conveniently fed by a small tap which any tinman would be able to fit to a bucket or watering-can. A still simpler arrangement is a syphon consisting of a piece of india-rubber feeding-bottle tubing, with a knot tied in it (looser or tighter as required) to regulate the flow of water into the bowl, and another to regulate its outflow.—*The Photographic Monthly.*

SENSITIZER FOR POST-CARDS

An excellent sensitizer for post-cards, which gives a pleasing brown tone, has been suggested by M. Sollet. It is not absolutely necessary that the cards be sized, but the paper is apt to keep the image better on the surface when sized with gelatine or starch.

The sensitizing formula is as follows:

Uranium nitrate	450 grains
Silver nitrate	45 "
Distilled water.....	1 ounce
Alcohol	4 ounces

Apply with a tuft of cotton. Print only as deep as the print is desired to be, wash in several changes of water, then in a weak solution of hydrochloric acid and again in several changes of water.

MAKING PAPER NEGATIVES TRANSPARENT

ONE of the simplest formulas for this purpose, and one which is not liable to make the paper friable as in the case of resinous mixtures is the following:

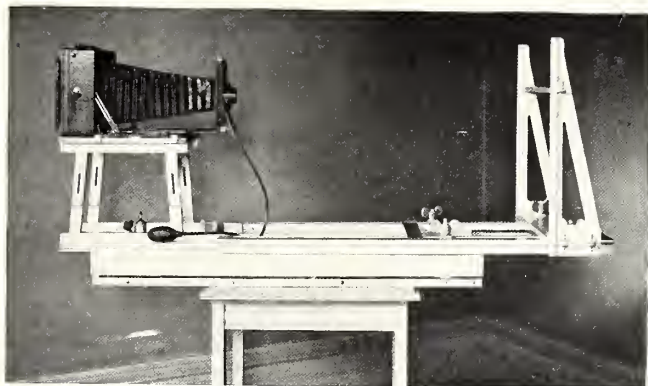
Paraffin wax	¼ ounce
Benzine.....	7½ ounces

This solution should be mopped on the back of the paper negative, well rubbed in and allowed to dry.

A COPYING-OUTFIT

GEORGE S. CURRIE, of Elgin, Ill., sends us photographs of his copying-outfit, which may interest readers of PHOTO-ERA.

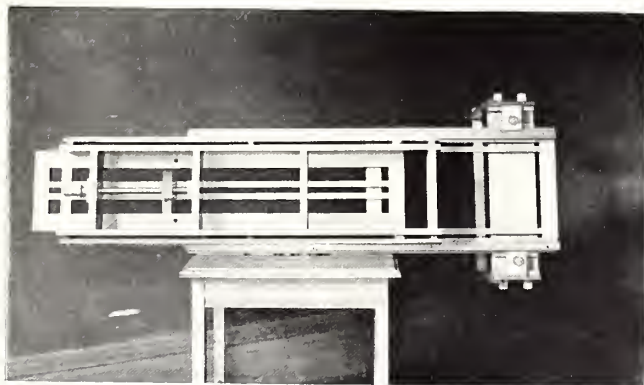
The photographs show the construction of the outfit so clearly that only a few figures seem to be needed. The three frames are seven and one-half, ten and twelve and one-fourth inches wide, and all are three feet long. The length available from lens to copying-board is seven feet. The height of lens-center from frame is thirteen inches. A light drawing-board is clamped to the vertical frame to which the print may be fastened. It is divided into one-inch squares. Plate-glass may be substituted and the frame used on end where shadows would be objectionable. A suitable hole in the board is a handy rig for making lantern-slides by reduction. Everything is within reach when the hand is under the focusing-cloth, and fine adjustment is secured by means of the screw shown in the bottom view. Mr. Currie has planned a rigid sort of tripod adjustable to any angle, from the vertical to the horizontal, which when added to the outfit makes it quite complete.



UPRIGHT VIEW



TOP VIEW



BOTTOM VIEW

A COPYING-OUTFIT
DESIGNED BY GEORGE S. CURRIE



NOTES AND NEWS

Announcements and Reports of Club and Association Meetings,
Exhibitions and Conventions are solicited for publication

THE PHOTO-ERA JURY OF AWARDS

If there should be any doubt in the mind of any person regarding the integrity of the PHOTO-ERA Fifth Annual Prize Competition — now in progress — that feeling should no longer prevail. There have been photographic prize contests, other than those conducted by this journal, whose methods of distributing the cash awards were not altogether above criticism.

To make the PHOTO-ERA Contest of 1907 an event of high artistic significance and, at the same time, give it a character that shall merit the confidence and esteem of every interested worker, is the aim of the publisher of this magazine. He has departed from the usual custom of investing the editorial staff with the responsibility of deciding the question of awards by securing a jury composed of men of eminent fitness, impeccable honesty and a sincere appreciation of the principles of modern photographic thought. The members of the jury are as follows:

WILLIAM L. TAYLOR, professional painter and chief artist of the *Ladies' Home Journal*.

ARTHUR FAIRBANKS, director of the Museum of Fine Arts, Boston.

WILLIAM HOWE DOWNES, professional critic and art-editor of the *Boston Transcript*.

F. BENEDICT HERZOG, amateur photographer, New York City.

RUDOLF EICKEMEYER, JR., professional photographer, of Davis & Eickemeyer, New York City.

Acting jointly with the judges will be:

WILFRED A. FRENCH, PH.D., editor and publisher of PHOTO-ERA, Boston.

THE NATIONAL CONVENTION

THE Twenty-seventh Annual Convention of the Photographers' Association of America was held in the Steele Educational Building, Dayton, O., Aug. 6, 7, 8 and 9, 1907. That these annual meetings are similar in character, from year to year, cannot well be avoided; but this is expected. In spite of this, every well-regulated photographer looks forward to this great national event with pleasurable anticipation, for many and obvious are the benefits it affords to all members of the fraternity. It is, perhaps, not too much to say that to the live, progressive photographer these periodical conventions are indispensable, and the stay-at-homes have reason to regret the loss of an opportunity.

The Dayton Convention, by no means a record-breaker in point of attendance, although 768 registered, was brilliantly successful. The attractions were elevated in character, appealing chiefly to the mind; and there was the delight of

association with kindred spirits, whom one meets only at national gatherings. The display of pictures was as extensive and inspiring as any seen at previous conventions, while the variety and excellence of photographic apparatus exhibited and demonstrated was such as to satisfy the keenest of appetites. The speeches and addresses, of a character befitting the occasion, were alone worth the trip to Dayton. The program, as planned by the Executive Board and faithfully carried out, was as follows:

MONDAY, AUGUST 5

Arrangement of exhibits. Reception of members.

TUESDAY, AUGUST 6

Morning Session, 9.30

Opening of Convention. Address of welcome, Mayor Calvin D. Wright, Dayton, O. Response, Past-President J. M. Appleton, Ohio. Reading of communications, Frank W. Medlar, Iowa. President's address, Clarence J. Van Deventer, Illinois. Lecture: "The Limit of Prices," Clarence M. Hayes, Michigan. Appointment of committees. Lecture: "The Photographer from the Viewpoint of the Stock-Man," Robert Lieber, Indiana. Announcements.

Afternoon

Given to the manufacturers and dealers exclusively. Demonstrations going on all the time.

Evening, 8

Boasts and Roasts. Joxie Collings, Roastmaster.

WEDNESDAY, AUGUST 7

Morning Session, 9.30

Reading of communications. Secretary's report, Frank W. Medlar, Iowa. Treasurer's report, Frank R. Barrows, Massachusetts. Lecture: "How to Make a Portrait Out of a Likeness," Otto Walter Beck, New York. Appointment of committees. Report on Salon awards. Announcements.

Afternoon

Devoted to manufacturers and dealers. 2.30, Trolley-ride for the ladies to the National Soldiers' Home.

Evening, 8.30

Vaudeville and concert.

THURSDAY, AUGUST 8

Morning Session, 9.30

Reading of communications. Lecture: "The Business End of the Operating-room." William Louis Koehne, Illinois. Selection of next place of meeting. Report of Nominating-Committee. Election of officers.

Afternoon

For manufacturers and dealers. 2.30, Visit to the National Cash-Register Company and the evening at Far Hills as their guest, with a dance.

FRIDAY, AUGUST 9
Morning Session, 9.30

Lecture: "System," G. W. Harris, Washington, D. C. Reports of committees. Presentation of Life Membership Certificate to Past-President Charles Wesley Hearn by Past-President George Graham Holloway. Presentation of Certificates for Salon Honors by Past-President J. M. Appleton. Announcements. Adjournment.

The papers by Mr. Hayes, Mr. Lieber, Mr. Koehne and Mr. Harris were treated in the ablest possible manner, as was expected of men who are esteemed among the leaders of the craft. Mr. Lieber, one of the oldest photographic merchants in this country, fittingly represented the side of the dealer, for during his long and successful professional career he has always shown the highest business integrity—a man of spotless character and reputation. The art-lecturer of the occasion was Otto Walter Beck, the author of the now celebrated volume, "Art-Principles in Portrait-Photography." The choice proved to be most happy, for Mr. Beck's subject, so vital to the artistic development of photographic portraiture, has never been presented with such delightful perspicuity, refreshing directness and telling force as on this occasion. Those of the audience familiar with the vigorous style of his book knew what to expect, and were not disappointed. A pity that this highly instructive lecture of Mr. Beck's, brimful of new and valuable suggestions as it was, could not have been heard by an audience composed of five thousand practitioners. President Van Deventer was sincere when he exclaimed, at the conclusion of the lecture, "I want to say that this is one of the most instructive art-lectures we have ever had before our Association."

A highly pleasing and instructive feature of the print-exhibits was a collection of nearly two hundred pictures assembled and sent to the National Convention by R. Dührkoop, of Hamburg, Germany. This collection, always the center of admiring crowds, comprised specimens of the artistic genius of R. Dührkoop, Theo. and O. Hofmeister, Herman Linck, Alfred Krauth, R. Grienwaldt, Otto Scharf, C. Ruf, E. Müller, Wilhelm Weimer, Wilhelm Kübeler, Hugo Erfurt, Otto Ehrhardt, Franz Grainer and other exponents of advanced German photographic art.

There were no Association prizes except Salon honors, but the American Aristotype Company awarded ten silver trophies for the best work made on its paper.

Salon honors, in the form of certificates, were awarded to W. E. Newton, C. M. Hayes, Miss Belle Johnson, Young & Carl, Byrd Studio, Melvin H. Sykes, Miss Jane Reese, J. C. Strauss, W. G. & A. J. Thuss, George J. Parrott, C. W. Scheide, J. H. Field, Alfred Holden, Dudley Hoyt, C. L. Lewis, Perry & Brecken, E. E. Doty, Knaff Brothers, A. L. Bowersox, Geo. H. Van Norman, Baker Art Gallery, J. E. Mock, T. Kajiwara, Jos. Thibault and C. W. Neiswanger.

On the main floor were Bausch & Lomb Optical Co., photographic lenses (Portrait Unar);

Kimball & Mathews, photographic supplies; A. M. Collins Mfg. Co., photo-mounts; Carl Ernst & Co., imported mountings; The McIntyre Printing-Machine; The Artura Photo-Paper Co., Iris and Artura Papers; Hammer Dry-Plate Co.; Seneca Camera Mfg. Co., cameras; Wollensak Optical Co., portrait-lenses and studio shutters; The Defender Photo-Supply Co., printing-papers and dry-plates; Voigtlander & Son Optical Co.; Prosch Flash-Lamp Co.; Burke & James, photo-specialties; Simpkinson & Miller, photo. supplies; Pohle & Werner Co., Invisible Baby-Holder; Willis & Clements, Platinotype and Japine Papers. On the second floor were The Anthony & Scovill Co., New York Studio Outfits and Cyko papers; Sargent Photo-Supply Co.; Bridges Mfg. Co., photo-mounts; C. P. Goerz American Optical Co., Anastigmat Lenses; H. Lieber Co., photo-supplies; Dresden Photo-Paper Co.; Ernst Oesser & Co.; G. Cramer Dry-Plate Co.; Geo. Murphy, Inc., photo-specialties; Berlin Aniline Works, photo-chemicals; and other firms. On the third floor were Curtis & Cameron, Harcourt Platinum papers. The Eastman Kodak Company with its various divisions—Aristo, Angelo and Nepera papers; Rochester Optical Co.; Folmer & Schwing Co. (Graflex and Graphic Cameras) and Century Camera Co.—were distributed in different parts of the building.

The question of the National Academy came up for discussion, Mr. Charles Wesley Hearn, of Boston, presenting strong views in its favor. The president appointed a committee of three—Mr. Chas. W. Hearn, Mr. J. M. Appleton and Mr. G. W. Harris—to consider the subject and report at the next annual meeting at Detroit.

After the usual discussion attending the selection of the next place of meeting, Detroit was accorded the honor. The election of officers for the ensuing year, which was next in order, resulted as follows: president, Frank W. Medlar, Spencer, Ia.; first vice-president, A. T. Proctor, Huntington, W. Va.; second vice-president, A. J. Thuss, Nashville, Tenn.; secretary, J. H. C. Evanoff, Salem, Mass. The office of treasurer, probably the most responsible of the entire board, and calling for exceptional traits—sagacity, tact and fidelity—is still graced by Frank R. Barrows, of Boston, Mass., a photographer of rare ability, who is serving his ninth year as guardian of the treasury. A thousand pities that these national conventions are regarded with seeming indifference by the many semi-professional photographers scattered throughout this broad land. They don't know what they miss. The advantages accruing to any intelligent worker, man or woman, are numerous and obviously priceless in importance. The annual dues are a mere trifle, and the expense of the journey to the place of meeting hardly worth considering, in view of the immense gain in pleasure, profit and experience. Let them ask the nearest member of the P. A. of A. and be convinced; or, better still, write to Treasurer Barrows for a copy of the Constitution and By-Laws.

THE NATIONAL ACADEMY OF PHOTOGRAPHY

THE academy idea is not dead; it sleepeth. Past-President of the P. A. of A. and the P. A. of N. E., Charles Wesley Hearn, with whom the project of forming a National Academy of Photography is his life's ambition, is chairman of a committee of three now having the matter in charge, and appointed by President Van Deventer of the National Association. Mr. Hearn's views on this subject, of interest to the artist-photographers of this country, will be printed in the November issue of PHOTO-ERA.

THE NEW ENGLAND CONVENTION

THE Tenth (Dicentennial) Convention of the Photographers' Association of New England was held August 27, 28 and 29, at Mechanics Hall, Boston. The results were highly gratifying and, in some respects, surpassed expectations. The attendance was excellent, although not all of the 608 members who had registered were present. This item alone was cause for official elation. There were several excellent addresses; those by Alon Bement, Chas. W. Hearn, S. M. Holman, Harry Fell and H. A. Collings fitted the needs of the hour and contained food for serious reflection. The display of prints seemed the best in many years, and its high quality was, indeed, inspiring. There was in evidence much work mediocre in quality; but why should n't there be? Rome was not built in a day, and artist-photographers are made by stages. They learn much by comparing their efforts with those of men more advanced in the art. Next year the reveler in white spots will show that he has conquered his besetting sin. The artist trying for association-prizes now realizes that atmosphere and suggestiveness are pictorial qualities which make a strong appeal to the jury, as constituted this year. Another lesson imparted at this convention is that the loftiest art-expression is not taken at its full value by the depositors of popular votes. The rank and file, who determine the prizes offered by manufacturers, seem to favor a degree of art-expression which, though high, is within the scope of their ability to emulate. That none of the highest honors went to a recognized prince of photographic art is a source of deep regret, and may be responsible for the turning away of high-class pictures from future New England conventions.

A delightful feature of the art-exhibit was the collection of German prints made possible by the generosity of R. Dührkoop of Hamburg. This display comprised nearly two hundred masterpieces by R. Dührkoop, R. Grienwaldt, Theo. and O. Hofmeister, Wilhelm Kübler, Hermann Linck, C. Ruf, Otto Scharf, E. Müller, Wilhelm Weimer, Hugo Erfurt, Max Glauer, Franz Grainer, Jacob Hilsdorf, Alfred Krauth, Dr. L. Kleintjes, Otto Ehrhardt, Anna Feilner, Robert Lehr, Hanni Schwarz and several others. The human element in these superb pictures, mostly portraits and genre, the dignity and character

of expression, as well as the masterly technique, made a deep impression upon every person privileged to see them. This truly remarkable collection was loaned by the National Association for which it was formed by Mr. Dührkoop. Nevertheless, PHOTO-ERA extends the heartfelt thanks of its friends and on its own behalf to this illustrious and public-spirited artist, as well as to the P. A. of A.

The Grand Portrait-Class comprised only sixteen entries — a rather meagre showing considering that this competition was open to the world. All the same, the art-standard of the work here submitted was extremely high, as evinced by prints from Garo, Parkinson, Doty, Mock, Marceau and Kazanjian. The grand prize, a solid gold medal of unique design and exquisite workmanship, was awarded to E. E. Doty, of Belding, Mich., for an 8 x 10 print of a young girl, seated, and arrayed in white French mull and white hat, her hands, holding a bunch of flowers, resting in her lap. The sense of easy repose of the model; the discreet management of white masses, accessories and background — centering the interest in the face; the feeling of atmosphere, and the simplicity, unity and harmony of the composition characterized a picture fully meriting the verdict of the jury. This print was shown three weeks before at the National Convention at Dayton, where it won Salon honors. Gold medals were also awarded as follows: Regular Portrait Class, first prize, Gay Studio, Fall River, Mass.; second prize, W. B. Davidson, Narragansett Pier, R. I., and third prize, J. P. Haley, Bridgeport, Conn. Landscape Class, first prize, C. L. Powers, Claremont, N. H., and second prize, Geo. E. Tingley, Mystic, Conn. The three medals offered in the Genre Class were not awarded, none of the entries meriting the honor.

The Aristotype Company awarded beautiful silver trophies to the following successful contestants: first, Marceau, Boston; second, Garo, Boston; third, Thiebault, Fall River, Mass.; fourth, Conley Studio, Boston; fifth, Byrd Studio, Cambridge; sixth, E. J. Poisson, Biddeford, Me.; seventh, W. C. Noetzel, Newton Centre, Mass.; eighth, Aram Kazanjian, Boston; ninth, Thuot Brothers, Fall River, Mass.; tenth, W. H. Coldwell, Brockton, Mass. These prizes were determined by popular ballot. Every delegate holding Treasurer Holman's receipt for dues to date was entitled to vote. The jury, whose duty it was to decide the association-prizes, consisted of Prof. Arthur Wesley Dow, of Columbia University, New York; Alon Bement, of New York, and George H. Van Norman, of Springfield, Mass. Their names were carefully withheld until after the awards were made public — a most admirable and exemplary scheme. The individual print-displays by the Angelo Paper and Aristo Paper divisions of the Eastman Kodak Company were imposing in point of quality, beauty and extent, and with the Dührkoop collection were probably the strongest attractions at the convention. The Aristo exhibit rejoiced in what was by many esteemed as the finest por-

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CHARLES VANDERVELDE
DECORATIVE LANDSCAPE
GRAND RAPIDS CAMERA CLUB



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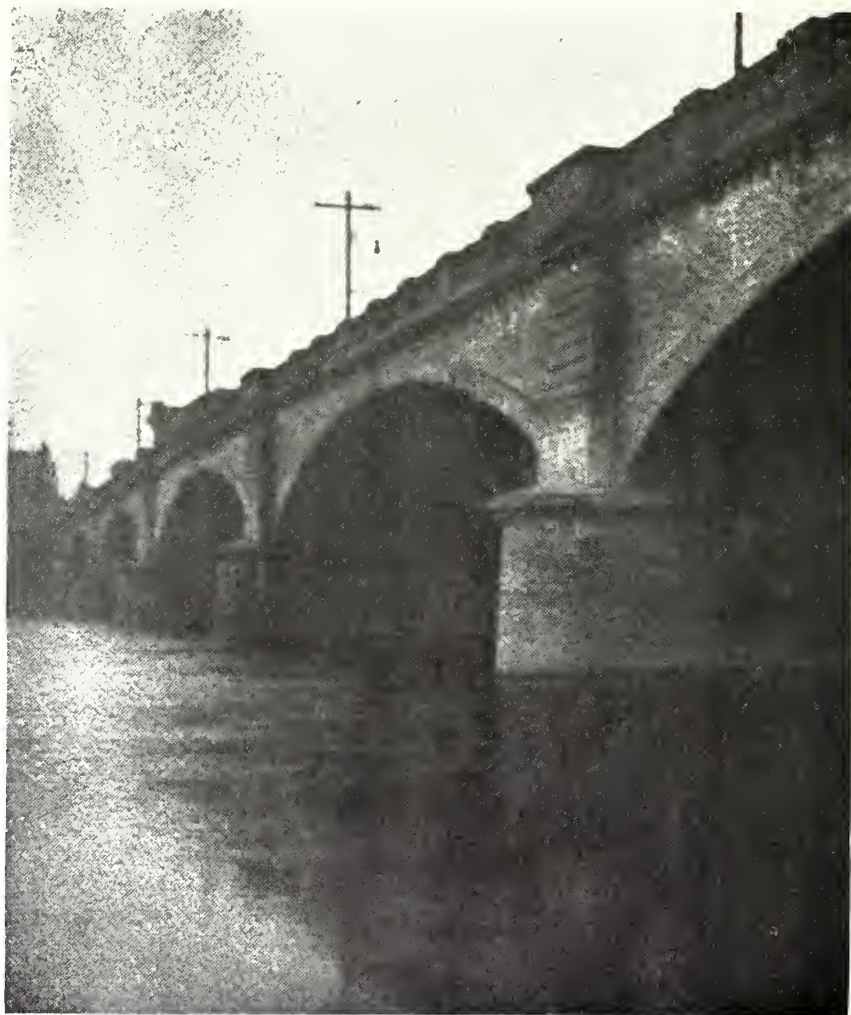
The Grand Rapids Camera Club

WILLIAM HOWE DOWNES

Art Editor of the "Boston Transcript"

IN the June issue of PHOTO-ERA a brief mention was made of the success of the ninth annual exhibition of the Grand Rapids Camera Club last April in the Ryerson Public Library. Opportunity to illustrate this exhibition by the reproduction of ten of the best examples of work in it is sufficient excuse for this return to the subject. It will be seen from our illustrations that the Michigan photographers have little to fear from comparison with the best exponents of artistic photography in the older parts of the world. Indeed, it is hardly too much to say that the little group of artists in Grand Rapids represented in the accompanying plates — Charles Vandervelde, Fedora E. D. Brown, Dr. and Mrs. W. A. Rawson, Kryn Stoel, Eleanor W. Willard, Claude A. Benedict and Avery E. Field — are *hors ligne*, and should have their excellence proclaimed to the world in unmistakable terms. Let no one be so impolitic as to express surprise that all this artistic accomplishment should come from Grand Rapids; it needs but a glance or so to convince the most skeptical observer that this city must be a center of sweetness and light.

Mr. Charles Vandervelde's work in some degree justifies him in wearing the cognomen of a celebrated old master. Like his famous namesake, he turns to the sea for his motives, and both in his landscapes and his figure-piece there is the refreshing hint of the salt breath of the ocean. The "Windy Day," in which we have a back view of the figures of two women standing on a pier-head and looking out over the tossing waters of one of the Great Lakes, is interesting in design, atmosphere and lighting; perhaps still more interesting in its suggestion of the action of a brisk breeze. In his "Decorative Landscape" the glimpse of the surf is very agreeable; but the chief interest of the design is centered in the graceful, free, natural arabesque formed by the bushes growing out of the sand in the immediate foreground — a charming *morceau*, happily utilized. "Where the Mermaids Dance" is a similar seashore subject, with a few sparse bunches of poverty-grass in the sandy foreground. "The Bridge" is in quite a different vein it; shows richness of shadows, massiveness of masonry arches, and a fine, simple sense of good composition, of pictorial lines and masses. All four of Mr.



CHARLES VANDERVELDE

THE BRIDGE

GRAND RAPIDS CAMERA CLUB

Vandervelde's prints are highly artistic works; I do not see how even the most carping critic of pictorial photography can deny to a man capable of such fine productions the temperament and instincts of a real artist.

"The Toy Boat" and "The Two Pets," by Fedora E. D. Brown, are good examples of genre photography, in which the negative merit of a total absence of self-consciousness on the part of the models is not to be lightly esteemed. The figure of the bare-foot girl on the beach in "The Toy Boat" is "cute" enough, and the device of placing the figure so high on the plate, and the boat so low, although a bold departure from conventional composition, has here resulted in a



KRYN STOEL

A WINTER'S DAY

GRAND RAPIDS CAMERA CLUB

certain element of unexpectedness in the matter of light-and-dark spaces which is highly piquant. "Two Pets" has the charm of naturalness; the portrait of the cat is all that could be desired, and the smile with which the other pet looks down at the tabby is expressive of the most unaffected contentment of mind. Other works shown by Miss Brown are "A Woodland Path" and "The Brook's Release," both landscapes. In the former the chief objects of interest are some sturdy trees and vines, and in the latter we have an upright composition showing the melting away of the fetters of ice which have for long wintry months bound the stream. This winter landscape has a rather novel and very effective combination of whimsical lines in the foreground.

Dr. and Mrs. W. A. Rawson's "A Good Smoke" is, I take it, a portrait in disguise, and as such it is of some merit. As an expression of the joy of the smoker it certainly leaves something to be desired. The same exhibitors contributed a "Portrait of Mr. F." which was excellent, and a good-sized upright landscape entitled "Eventide," which was rich in color, and had just the desirable degree of mystery in the slight blurring of the edges of a good group of naked trees projected against the sky.

Landscapes with figures are the specialty of Kryn Stoel, who manifests in his "Winter's Day" and "Among the Sand Hills" an uncommonly strong feeling for naturalism. This field of effort is worth cultivating, because it has so many possibilities in it. In the "Winter's Day" the suggestion of home comfort and



AVERY E. FIELD

GRAND RAPIDS CAMERA CLUB

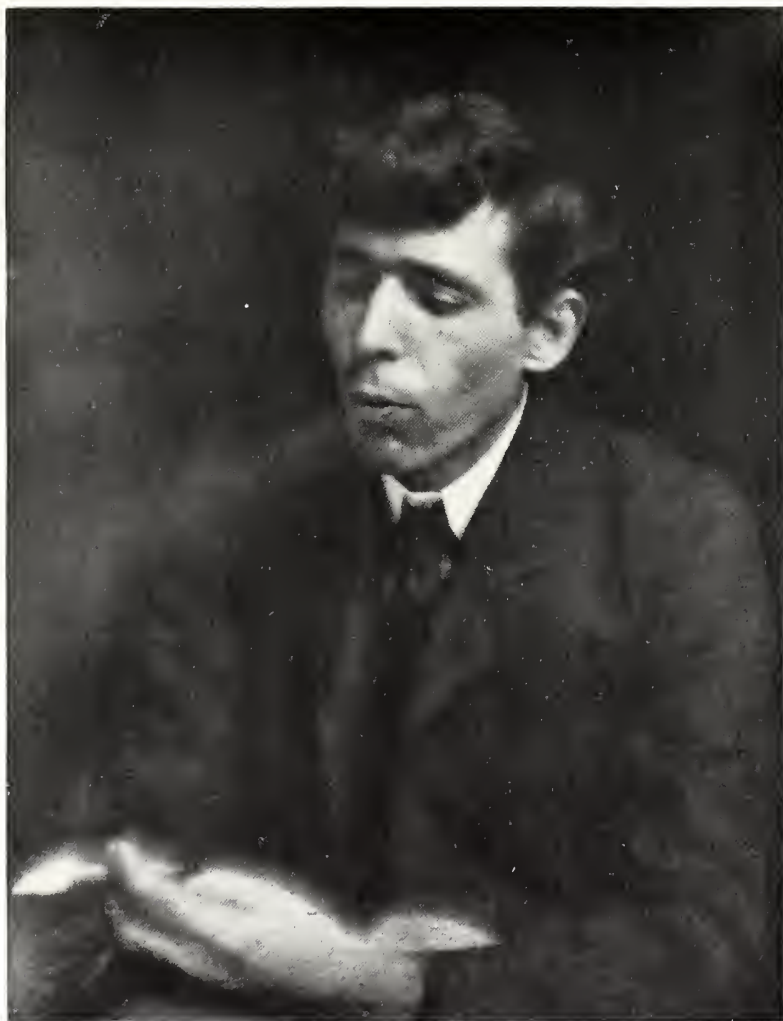
THE WAY HOME

snugness in the farmhouse is contrasted with the bleak character of the scene outdoors, and the sentiment of the picture, which is obtained without any violence, results from this contrast.

Mr. Stoel's "Among the Sand Hills" is still better in some respects, the group of three figures in the foreground being very well placed in the design, and the white accents in the costumes forming a valuable spot. The "lay of the land" in this landscape is attractive in a pictorial sense. It is like a perfect portrait of the place itself, which is far from being uninteresting.

"Fishermen at Katwyk," by Eleanor W. Willard, combines artfully the sea, sky and beach with the human note supplied by a stooping group of fisher-folk and a portion of a fishing-boat in the foreground. It is very well done. The atmosphere has the moist consistency characteristic of the Dutch coast; the gleam of fugitive sunlight across the waves is also characteristic of the fickle North Sea weather conditions, and the reflections of the figures in the shallow pools of the beach count well in the general effect. There is reticence in the conception; it does not wear its heart upon its sleeve; it does not tell too much.

"Jessica," by Claude A. Benedict, is a head-study of a young girl, a distinctly pretty type, almost Venetian in its contours. The lighting is managed finely; the



DR. AND MRS. W. A. RAWSON

A GOOD SMOKE

GRAND RAPIDS CAMERA CLUB

expression is admirably "detached;" and the touch given by the hair-ribbons, which take the highest light in the picture, is invaluable.

Avery E. Field's "The Way Home," a gum carbon on tissue, is a landscape which might almost be taken for an etching and, although I suppose it is not good form for a photograph to look too much like something else, it must be acknowledged that this is a very good piece of clean-cut landscape work. The drawing of the trees, if one may speak of drawing in connection with a photograph, is a pleasure to look at. Possibly the values of the tree-stems are a thought too similar to those of the shadowed sides of the buildings beyond.

Long-Focus vs. Short-Focus Lenses

C. H. CLAUDY

OWING to the looseness of photographic terminology, there exists a great deal of ignorance regarding lenses, the advantages of some over others and the uses of one variety over another variety. In order to be plain, therefore, it seems fitting and necessary to start with a definition of long-focus and short-focus lenses. { These definitions are little more exact than the loose names they represent, but will serve for distinction in this story.

We will consider, then, if you please, that a short-focus lens is one which is equal to or less in focus than the shortest dimension of the plate it is used with, a medium-focus lens is one which is at least equal in focus to the diagonal of the plate, and a long-focus lens is one which is equal to the sum of the two sides of the plate, or greater, in focus. This is a rough calculation, but it will serve, and it has the merit of indicating that the longness or shortness of focus is to be considered with relation to an individual size of plate, and not to all plates.

To make this plainer — I possess a small anastigmat lens of seven inches focus. When I use this with a $3\frac{1}{4} \times 4\frac{1}{4}$ plate, I have, according to the above classification, a lens more than medium and slightly less than long-focus. When I use the same lens on an 8×10 plate I have a very short-focus lens, the focal length of which is less than the shortest dimension of the plate. Yet the lens is the same.

I have preferred to give these definitions in terms of inches and plates, rather than degrees, because I believe they will be plainer to the average reader. But it can do no harm to add the angular covering in degrees of a lens for different plates. So, according to the above classification, a short-focus lens is one which covers on the plate an angle of sixty degrees or more (a four-inch lens on a 4×5 plate), a medium-focus lens is one which covers on the plate an angle of not more than forty-eight degrees (a six and one-half inch lens on a 4×5 plate) and a long-focus lens is one which covers the plate at an angle of thirty degrees or less (a nine-inch lens on a 4×5 plate).

Of course, these amounts vary — for instance, a 5×7 and a 5×8 plate will give different figures with the same lens — but what I am striving for here is an approximate terminology, not an exact one. Lens makers and sellers usually list a lens by the angle its focal length makes with opposite corners of the plate — with the diagonal, in other words. Technically, this may be right; practically, from the photographer's point of view, it is all wrong. The angles in which he is interested are those which are actually transferred from landscape to plate — and if he focused and took a picture of a huge protractor, he would so level his camera that it was level and parallel with the long way of the plate and not the diagonal. Consequently, the calculations made above were based on a five-inch base line — the long way of a 4×5 plate — and the angles calculated with

perpendiculars erected from the center to the height of the various focal lengths of lenses indicated above.

Now, then, it does not need to be said that the longer the focus of the lens, the larger the image on the plate. Consequently, if you have a short-focus lens, and stand a hundred feet from a very high building, you may get it all in. I, with a long-focus lens, must move considerably farther away in order to get in all of the building. Our pictures look different. They were made from the same model, but mine looks like a building as the architect drew it; yours looks as if it had suffered from delirium tremens! Ergo, you argue, the long-focus lens is indicated for correct perspective. So it is, but not from any inherent virtue in the lens. If you will take another picture from the same spot I did, with your short-focus lens, you will get a picture of the building exactly as good as I did, only yours will be much smaller. If you enlarge yours to the size of mine and trim like mine, no one could tell the difference. Therefore you change your opinion, and say it is not the lens, but the distance, that determines the perspective. That is entirely right as far as it goes. Perspective, meaning the angles which objects subtend to the eye — of the observer or the camera — is utterly and entirely a matter of point of view, of sufficient distance from eye to object not to distort these angles. Why, then, you ask, use the much-talked-of long-focus lens? Because, the answer is, it forces you to get far enough away from your object to get a correct perspective. You have n't proportional sense enough — I have n't — hardly anybody has proportional sense enough in his mind to actually see distortion in nature from too close a view. The mechanism of the eye and of the mind automatically correct the distortion. When you 'look at a man standing two feet from you, and when he walks across the other side of the room, there is a difference in his image in your eye of hundreds of per cent in size. Yet he does not seem to you to become a pigmy as he walks twenty feet. The mind corrects the image of the man on the retina, and the mind sees him the proper size. So does it correct distortion. But it will not correct distortion in a picture, because everything in a picture comes to the eye at once — in nature it comes in a series of glances. That may seem a poor explanation, but it states facts, just the same. Consequently, we need a lens which will insist on our getting far enough away from any object to ensure that the angles of that object will not be violently distorted in our photograph. If we want to use the short-focus lens and enlarge, we will get the same results, *provided* we have taken the same standpoint the long-focus lens would have forced us to take.

Elaborating this a little, consider the following. One hundred feet from a house I take a photograph on an 8 x 10 plate with a ten-inch lens, and the same distance, in the same place, a photograph on a 4 x 5 plate with a five-inch lens. Both photographs are identical, except as to size — enlarge the 4 x 5 picture, made with the five-inch lens, and lay it over the 8 x 10 picture made with the ten-inch lens, and they will exactly coincide.

But if I make two pictures, both on 8 x 10 plates and one with a ten and one with a five inch lens, at one hundred feet distance from a house, the one will

include on the plate a much greater angle of vision than the other, one being about fifty and the other ninety degrees in angle; and so, while the angular perspective — the angles the object subtends to the lens and plate — would be the same, the visual perspective would be widely different. To make them the same, the 8 x 10 print made with the five-inch lens would have to be trimmed to a 4 x 5, when the first case instanced in the above paragraph would be paralleled. These things are not matters of opinion or belief — any one can prove them for himself with a pencil and a sheet of paper.

Now, however, there is another side of this question — unfortunately, I am running up against terminol gy again. The perspective is wholly a matter of the angle subtended by the objects to the eye. Yet the angle of view interferes with a correct perspective in no uncertain manner. I hope to make this plain in a moment. Suppose you have a panoramic camera taking a five-inch film, and are using a fifteen-inch lens on it. A fifteen-inch lens on a 5 x 7 plate is a reasonably long-focus lens — more than the sum of the sides. So if you will cut out any 5 x 7 section of the forty-five inch film, five inches wide, made in such a camera (we will suppose, for the sake of argument, it takes full 180 degrees), you will have a picture the perspective of which is not unpleasing. The angles subtended by the objects in the picture — the buildings, roads, streets, etc., — are not wide and flaring, but natural, easy and correct. But the whole panoramic picture is not natural. It looks strained. If there is a street in it which we know to be straight, the street curves, and has angles in it. The only way to make this panoramic picture look right is to bend it in a semicircle, and require the head to turn on the neck to see it all! In nature we would have to face from east to west to see all that is in the panoramic picture — when all the landscape from east to west is laid out straight in front of us on a piece of paper, the mind resents the unnatural appearance and we see that the picture is distorted. This principle is as old as the hills. The “Historic Panoramas of Famous Battle-fields,” which were twenty years ago exhibited all over the country and still linger at amusement resorts, were examples. Instead of painting one huge flat picture, they painted a huge round picture, and the observer stood in the center. He had to walk all about a platform and turn his head this way and that, to see all the landscape. It had a north, south, east and west, corresponding to the same points of the landscape in nature. Not long ago I saw Gettysburg in panorama and, being familiar with the real field, I needed no help to see and understand just where I was and what I was seeing. I could go to the exact spot on the battle-field to-day on which I supposedly stood in the panorama building to see the painting. Were that painting stretched out end for end, flat, I could n’t have told, for the life of me, which was which in the matter of direction.

Now, as I have explained, the short-focus lens will yield a picture the angular perspective of which is as perfect as any long-focus lens can give, providing you are a sufficient distance from the object. But the short-focus lens includes too much on one plate — more than the eye normally sees. Hence the result on the plate and in the picture is that, while the angles subtended by the objects are



ELEANOR W. WILLARD

GRAND RAPIDS CAMERA CLUB

FISHERMEN AT KATWYK



FEDORA E. D. BROWN

THE TOY BOAT

correct, the pictorial perspective, as distinguished from the angular perspective, is jarring, because it includes too much land-space.

I am continually speaking of landscape only for the sake of illustration; the subject is of equal, if not greater, importance in portraiture — figures and busts. In this particular, however, the trouble with the short-focus lens is hardly that it includes too much for the eye to recognize as natural, but that it requires the operator to come so close, to make a full-sized figure on his plate, as to distort the angles of the subject. Please understand that “angle,” in this connection,

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FEDORA E. D. BROWN

THE BROOK'S RELEASE

means the degree measurement between lines of inclusion of subject and lens, and does not refer to contours, angular or otherwise, in the subject's physiognomy!

It would seem that, if the greater the distance of lens to subject the better the perspective, the telephoto-picture would be better in perspective than any other kind. And for certain things this has proved so, there being those who contend that a portrait of a person, a couple of hundred feet away, made with a telephoto, has a delicacy and a perspective pleasure not found elsewhere! On the other hand, one can easily imagine situations in which a too great distance from



FEDORA E. D. BROWN

TWO PETS

the subject would entirely destroy its beauty. Take any interior — knock out the front wall, and retire half a mile. Take a picture with a telephoto. The result is a picture of the rear wall. The floor and ceiling do not show at all, as a continuation of their lines of incidence to the lens has, at that distance, made them, to all intents and purposes, parallel. Most pictures of interiors have floors and ceilings too steeply sloping in the foreground, because a short-focus lens close on the object must be used in order to make the picture at all; but the error could be just as bad on the other side, if circumstances allowed it. And so it seems to me that there is a possibility of mistake being made in using a lens of too long a focus and getting too far from the object — and that point is reached when lines of incidence, which are usually and normally angles, become straight and parallel lines. So that I should be inclined to argue that the portrait made two hundred feet away would be unnatural in perspective, just as one made two feet away, on a 5 x 7 plate, and the happy medium to be found somewhere between



CLAUDE A. BENEDICT

JESSICA

the two, with a lens which approximates normal seeing-conditions. As normal seeing-conditions vary with different people, this is somewhat hard to state, but it is in the neighborhood of ten degrees. (Distinct vision is meant.) Hence a lens of at least the focal length of the sum of the two sides of the plate it is to be used upon is suggested for the best pictorial effect, and this has been increased by nearly one-half, at times, with good results. I am told that Mr. Coburn, admittedly a master in pictorial work, uses at times a lens of twenty-five inches focus on an 8 x 10 plate. The sum of the sides of the 8 x 10 plate is eighteen inches, so this rule of thumb has been bettered by about forty per cent!

To sum up, and to attempt to give a final clarifying touch to the whole somewhat puzzling question —

Long-focus and short-focus lenses give equally good or bad angular perspective, if used at equally correct or incorrect distances from the objects they take.

Long-focus lenses enforce a good distance by producing a large image.

Short-focus lenses encourage false perspective by giving a small image and so dragging the operator nearer the object to increase the size of the image.

Long-focus lenses are superior in their inclusive perspective, or pictorial perspective, inasmuch as the angle they include upon the plate more nearly approaches that of the human eye.

Short-focus lenses include too much in all their pictures, and strain artistic results, by requiring the eye of the observer to see all at once, in a flat surface, what the eye would see in several glances, in nature.



The Small Camera as a Pictorial Convenience

Part I. — Advantages of a Small Camera

WILLIAM F. ZIERATH, M.D.

WHAT slaves we mortals are to opinion! What antiquated fallacies we pursue, simply because of the dictum of some one who, in the foggy photographic past, was a pictorial somebody! We toil, struggle, sweat and swear at our heavy 8 x 10 outfit. Our hobby rides us, instead of we riding it. Why? Just because somebody, sometime, said that the small camera was not for "serious work"—said a film-camera was a joke, and gave out the *ipse dixit* that the large-size plate-camera was the medium *par excellence* to record nature's beauties photographically.

And the confiding photographic neophyte, believing, laid aside his pocket Kodak, Hawkeye or Ansco, drained his purse to the last penny and purchased an 8 x 10 or 6½ x 8½ camera; then another period of saving and the purchase of an anastigmat lens and a high-priced shutter. Now he is really equipped to do pictorial work. Now he can show those fellows who are always getting their work in the Salons, exhibitions, prize-contests and magazines that he is ready to meet them on their own ground, and give them battle.

Poor deluded soul! He struggles uphill and down dale, panting and perspiring ever onward. He has made up his mind that he will compose a picture in a certain way — a boulder-strewn slope with a herd of grazing sheep, a sleepy shepherd drowsing in the shade of an old elm, and a sky full of lazy clouds. Indeed, that will be a picture, and he hurries past a wealth of photographic possibilities vainly seeking the picture. His artistic mind is not receptive, the mental picture has been drawn and nothing else satisfies. Things must be just so, because large-size plates cost money, large-size sheets of paper cost money, and they require a generous amount of developer and toning-fluid. But here is a pretty view he can't pass by. Then ensues a long period of "fussing." Straps to unbuckle, heavy tripod to unfold, loose parts to adjust — maybe he left the most essential

one at home in the dark-room -- and all the while he is busy setting up his 8 x 10 apparatus the playful zephyrs have whisked his focusing-cloth half way down the hill or into the brook and sadly ruffled his temper. At last everything is ready. A long critical study of the image on the ground-glass; "Yes, it is a fine thing, but the light is n't just right. I can't afford to waste a plate. I'll come again when the sun is brighter and the shadows are longer." But the light, the place and the photographer never meet again. At no time are conditions even as good as when he first saw the scene. Consequently, another pictorial gem is lost to posterity. And on he plunges, worn, weary and footsore. By the end of the day he has made an exposure or two. Conditions were nearly right and he was very careful, did not make a duplicate exposure because he was so careful, and, besides, large plates cost money. Then at night, in the dark-room, the developer revealed the fact that he had inserted the slide in the holder one corner first, and that oblique black streak across the plate certainly did show up very quickly. Physical weariness, failure and discouragement take the enthusiasm out of anybody very rapidly, especially if he has made a big investment and has faithfully looked after the details. A succession of events like these narrated means death to photographic ambition. Play becomes hard work; and it is hard work, indeed, with inadequate reward.

The dogma that the large plate-camera is the only proper agent to use in recording nature's beauty-spots is a delusion and a snare. It is a superstition which, like the "constant watching and rocking" plate-developing method, ought to be relegated to the bone-yard of photographic absurdities.

The finished print is the ultimate result of all photographic activity, and there is no logical reason why we should select crude and cumbersome tools to attain that end. The big camera, as the tool of the pictorial worker, has little to be said in its favor. It is a drain on one's strength, purse and enthusiasm. Where one wishes to combine pleasure with profit, where pure, unadulterated fun is linked with the desire to cultivate one's artistic taste, where the joy of picture-taking is placed on the same plane as the keen satisfaction in achieving a pictorial result, then the small camera is the tool of tools for the pictorial worker.

As in all other lines, so in photography, there has been a process of refinement going on, both in the instruments necessary to produce results, and in the results themselves. The efforts of a well-trained corps of mechanics have been directed toward the improvement of the camera itself, and in this particular phase of the photographic art the strides forward have been nothing short of marvelous. Compare the average 8 x 10 view outfit, heavy and clumsy, with its multiplicity of loose parts, with the dainty and efficient little pocket-camera of the present day. It is a triumph of mechanical ingenuity, light and compact, yet strong and durable. Possessing, as it does, all the mechanical devices necessary to properly throw the image on the sensitive photographic surface, and being delicately adjusted, taking the picture, after it has been composed, is a mere matter of a twist of the wrist. And the resulting negative is the duplicate of that made with the large camera, except in size.

"But," some will exclaim, "you have n't a ground-glass to focus on." One can have it if he wishes; but it is unnecessary, and, in fact, in a great many cases it is a positive hindrance to good work. Now that may seem like a far-fetched statement, but the assertion is seriously made that the large camera, simply because of its ground-glass, has tended, more than anything else, to the formation of bad habits.

Too many of us stroll through the woods, over the hills and valleys, and along the seashore composing our photographs on the ground-glass. We see something which we think might make a good picture and then try to verify our suppositions on the focusing-screen. We do not trust our artistic sight unaided; we need a mechanical proof to tell us that our first impression was right or wrong. The true artist composes his picture without the aid of a mechanical accessory. When he has composed his picture his ground-glass or finder is used to keep his camera in line with his composition. The finder on the camera serves the same purpose as the sights on a rifle.

Whenever these accessories are used otherwise, a bad photographic habit is formed. Too much dependence is placed on them, and we pass by many a pictorial possibility simply because we have trained our eyes to gauge a composition by its reflection on the ground-glass. While we are still fresh and vigorous in our day's tramp abroad, we often see things which we think might compose into a good photograph. We adjust our camera and tripod, view the scene on the focusing-screen, change position frequently and, finally, decide that it will or will not be worthy of an exposure. After this performance is repeated a half-dozen times or so it becomes a painful necessity, and is done in a perfunctory manner, or not done at all. Consequently, many scenes that are worthy of our best efforts are passed by with only a casual glance. On the other hand, the pictorialist who has trained his eyes and not his ground-glass enjoys his outing more because it is devoid of so much of the drudgery, and is more productive of results, both in quality and quantity. If a mechanical aid must be used, why insist on the use of a large camera with a focusing-screen? The large, brilliant and accurate finders attached to hand-cameras of the present day are thoroughly dependable, and will give one all the assistance necessary to good composition.

The greatest disadvantage the pictorialist, who relies on the large plate-camera, labors under is that when he most needs his instrument it is not at hand. Pictorial opportunities often present themselves at unexpected times and places. The user of the small camera makes his instrument his constant companion in his rambles abroad. Our other friend, on the contrary, takes his with him only on previously planned excursions. He usually has a definite locality in mind and hastens to it, passing a wealth of good things, photographically speaking. The Kodak devotee, on the contrary, always has his principal working-tool with him. Light in weight, small in bulk, it interferes in no way with the enjoyment of his recreation period, whether it be spent in strolling about, playing golf, rowing, yachting, hunting or fishing. When the emergency arises, necessitating the use of a camera, he is "there with the goods."



CHARLES VANDERVELDE
A WINDY DAY
GRAND RAPIDS CAMERA CLUB



Again, the absolute unobtrusiveness of the Kodak permits him to make exposures where the manipulator of a large camera would attract undesirable attention, and thereby mar the composition of the scene. This is very manifest in genre, child studies and street work. His subjects are usually unconscious of the fact that they are being photographed, and therein, oftentimes, lies the chief charm of his composition. The portability of his instrument, too, permits him to select a point of view that would often be entirely out of the question did he manipulate a large camera.

The small cost of negatives contributes, in no small way, to his success in obtaining photographs of unusual artistic merit. The excessive cost of large plates and other supplies forbids the slightest extravagance on the part of the user of the large outfit. He hesitates to make an exposure on a subject, waiting for a better lighting or a more unstudied pose. The old adage, "He who hesitates is lost," applies here with more than ordinary directness. Too often the scene changes, even as he speculates, and never thereafter even approaches the picturesqueness that first impressed him. Our Kodak friend, however, realizing that an occasional poor negative is a matter of small financial moment, exposes as often as the scene warrants, and his productions excel in variety, quality and quantity. This statement is not to be construed as an advocacy of the reckless hit-or-miss method of exposure, with the hope that out of a dozen films exposed there will be two or three worth keeping. Far from it. Liberality in the use of materials should be tempered with good judgment as to pictorial value.

The loading, unloading and developing conveniences of the small camera need only be mentioned. Their usefulness is self-evident.

Photographic versatility is an accomplishment that comes naturally to the user of the small camera. He looks at everything from the artistic point of view. He regards all the animate and inanimate objects of nature as suitable subjects for his camera, needing only his critical study to construct them into pictorial compositions. His productions are therefore varied. The principles learned in the proper treatment of one group are applied in the treatment of others. His artistic sense is not developed in one direction only, but is well rounded in all. His work, viewed as a whole, shows the touch of a master hand. In landscape, genre and portrait-work he shows up well. His originality is stimulated and he finds pictorial material where the usual run of photographers fail even to look. American pictorialists are devoting too much time to the study of landscape photography at the sacrifice of genre and portrait work. Every Salon and exhibition gives evidence of it, the number of landscapes being out of all proportion to other work.

The increasing use of the small camera by pictorial workers will, it is hoped, tend to rectify this unbalanced condition of affairs and give us a breadth of view, photographically, that will elevate American photography to the highest pinnacle of artistic achievement.

(To be continued.)



G. R. BALLANCE

BOBSLEIGH RACING

Moving Objects: A Note for Hand-Camera Workers

A. G. WORKMAN

HAND-CAMERA workers are chiefly interested in moving objects; e. g., trains, sailing boats, waves, animals, human beings. Successful negative-making will therefore depend upon so adjusting the shutter as to give time enough for plenty of exposure without showing serious movement of the object. The hand-camera man may conveniently divide all movements into two kinds. First, objects moving towards or away from him, i. e., along the line of sight or axis of the lens; as, for example, a railway train entering or leaving a station as seen from the platform edge, or from a railway arch crossing a straight bit of line. Second, objects moving across the line of sight; as, for instance, a train seen "broadside on" from a field, or street traffic as seen from the pavement when looking straight across the street, or water falling down a cascade, etc. Of course, it seldom happens that we have to deal with objects which move exactly along the line of sight, but generally we can say whether the direction is nearer the first or second class of movement. The difference is important, as the accompanying diagrams will show. Take the case of a train, and suppose the heavy line A to represent the face of the

engine moving across the line of sight. Fix attention on, say, one of the buffers, represented by the small circle at A, Fig. 1. On the ground-glass or plate of the camera A would be represented by a . Now suppose that in one second of time A moves to B. This on the plate corresponds to a movement of the image from a to b . If $a b$ is more than $\frac{1}{100}$ inch on the negative it will show as a blur.

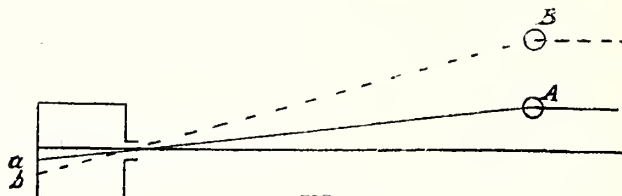


FIG. 1

Now let us change our position, so that we see the engine-front coming straight towards us, i. e., along the line of sight, as in Fig. 2. Here C represents the buffer, which in one second of time moves to D, and during this time the image moves from c to d on the plate. It is very easy to see that the movement $c d$ is much less than the movement $a b$, so that the shutter speeds required in the two cases are obviously different.

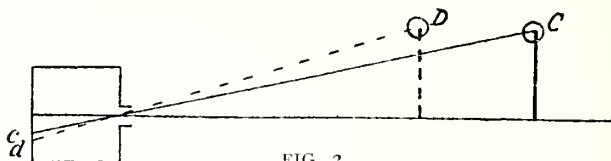


FIG. 2

Instead of C moving to D, we may imagine it moving to F or to G, Fig. 3, for instance; but so long as D, F and G are in a straight line with the lens the *position* of the image in all three cases would be the same; viz., d . But there is also the size of the moving objects to consider; for objects moving towards the lens, as from C to D, give us an increasing size of image as well as a change of position. Similarly, objects moving away from us, as from C to G, give a reducing size of image. It is only when they keep the same distance from the lens, as when moving from C to F, that they retain the same size on the plate, Figs. 3 and 4.

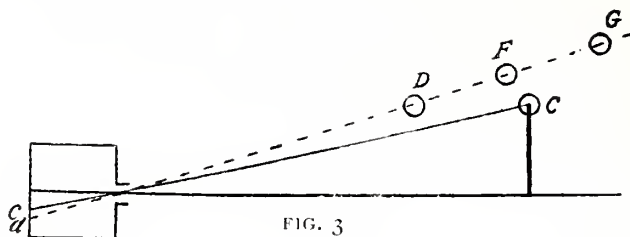


FIG. 3

One other matter must be noticed; viz., the distance between the lens and ground-glass or plate. This in turn depends upon two things; viz., the focal length of the lens and the distance of the object.

Increasing the focal length of the lens increases the distance between the lens and plate, Fig. 4, increases the size of the object, and increases the displacement of the image. Thus the displacement $c d$ with a short-focus lens becomes $e f$ with a longer-focus lens. Roughly, we may say that the displacement is proportional to the focal length employed. Suppose we are using a 5-inch lens and $c d$ is just $\frac{1}{100}$ inch. (This is the practical limit of movement allowable.) Changing this lens for an 8-inch lens our displacement, e. g., Fig. 4, would be $\frac{8}{5} \times \frac{1}{100}$, or say $\frac{1}{63}$ inch — an amount that would show a blurred image in the print.

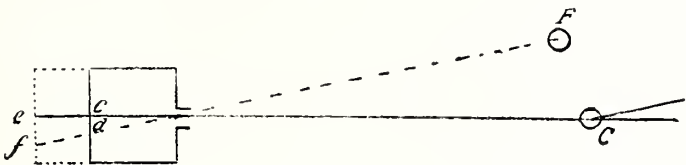


FIG. 4

Again, if we go nearer to our object we have to increase the distance between the lens and plate, which brings us to the same state of affairs as though we had retained the same standpoint and used a longer-power lens.

A Table showing the Slowest Shutter Speeds available so that the image of a moving object may not be displaced more than $\frac{1}{100}$ inch with a lens of 5-inch equivalent focus:—

Rate of moving object.		Examples (see below).	Distance of moving object from lens.		
Feet per sec.	Miles per hour.		Quatr. mile. Secs.	1000 yds. Secs.	100 feet. Secs.
1	$\frac{2}{3}$	Loitering.....	3	$\frac{2}{3}$	$\frac{1}{3}$
2	$1\frac{1}{2}$	Strolling.....	$1\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{6}$
3	2	Children walking.....	1	$\frac{1}{5}$	$\frac{1}{5}$
4	$2\frac{3}{4}$	Adults walking.....	$\frac{2}{3}$	$\frac{1}{6}$	$\frac{1}{6}$
5	$3\frac{1}{2}$	Children playing.....	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{8}$
10	7	Football, cricket, etc.....	$\frac{1}{3}$	$\frac{1}{8}$	$\frac{1}{6}$
22	15	Trotting horse, cycle.....	$\frac{1}{7}$	$\frac{1}{40}$	$\frac{1}{100}$
44	30	Galloping horse, motor.....	$\frac{1}{5}$	$\frac{1}{75}$	$\frac{1}{250}$
88	60	Express-train.....	$\frac{1}{30}$	$\frac{1}{150}$	$\frac{1}{400}$
100	68	Flying birds.....	$\frac{1}{50}$	$\frac{1}{250}$	$\frac{1}{750}$
1000	680	Projectiles.....	$\frac{1}{350}$	$\frac{1}{1800}$	$\frac{1}{5000}$

The figures are to be taken as convenient approximations.

Clearly, there is no time to make elaborate calculations just before a shutter exposure is to be given. We must therefore be prepared beforehand with some such table of moving objects as that given below, and take it as our guide until the fruits of experience or inexperience show that it can be dispensed with.

Loitering crowds; people standing about a market-place, etc., cattle grazing, etc. Strolling, i. e., slowly walking, dawdling about, cows walking slowly, sheep grazing. Children walking quietly, horses or oxen ploughing. Adults walking at an ordinary speed of three miles an hour, children playing such games as marbles, rounders. Adults playing cricket, tennis, football, rackets, etc. Trotting horse, cycling, slow train, waves. Galloping horse, men racing, motor-cars, trains, waves. Express-train at full speed.

It will, of course, be understood that the above shutter-times are the minima or slowest available speeds for normal conditions; but there are obviously many conditions which have wide variations. Consider a game of cricket. We may have the moment of changing an "over," men strolling, or a return after a blank stroke, or the players rushing for a "tight fit." Again, we may have men running at a comparatively slow speed in a mile race, or sprinting for one hundred yards.

Turning again to Figs. 1-4, a moment's consideration will show us that when the direction of the moving object is such that it does not change size, i. e., keeps the same distance from the lens, it has the greatest displacement on the ground-glass. Thus had C moved in the direction of F for a distance equal to CD or CG, then F would be considerably beyond the line DFG. This is shown in Fig. 1, where the image displacement CD is considerably greater than in Fig. 2.

In the above table the calculations have been based on the assumption that the image is moving across the line of sight; i. e., as in Fig. 1. This may be taken as practically equivalent to the maximum displacement, except when the object is near the camera.

It almost goes without saying that where negatives are being made for the purpose of enlarging we must take extra care about adjusting the speed of the shutter, so that when the enlarged image is made the enlarged blur may not exceed say $\frac{1}{16}$ inch. The reason why we may allow a greater blur in an enlargement is simply that small contact-prints are usually examined at a normal distance from the eye, say twelve inches, while enlargements, e. g., 20×16 or more, are generally viewed at say three feet or so, and at this greater distance a $\frac{1}{16}$ -inch blur would not be more noticeable than a $\frac{1}{160}$ -inch blur seen at ten or twelve inches from the eye.

Similarly, if the negatives are for lantern-slide making, we must bear in mind the size of the picture on the screen and the average distance of the spectators, then make allowance for the permissible blur, bearing in mind the nature of the subject. For instance, a greater amount of blur would be permitted in the case of splashing waves than in the case of a skipping-rope. In the former case we look for general movement; in the latter, we look only for movement of one thing.—*The Practical Photographer*, No. 5.



PHOTO-PICTORIALISTS

A VIEW OF THE SUBJECT

Individuality as Shown by Different Interpretations of the Same Scene

PHIL M. RILEY

With Illustrations by the Photo-Pictorialists of Buffalo

THE fact that no two people see exactly alike has long been conceded, and the observation certainly has no better exemplification than in respect to pictures, and particularly in respect to the production of them. If conditions were otherwise, our galleries would contain extremely few original works of art, and monotonous similarity would prevail in all instances where the artist had not been endowed with extraordinary ability. But thanks to a wise provision of nature, every pair of eyes reflects upon the brain behind them a different conception of what constitutes an harmonious composition; and in the measure that the brain possesses ability to eliminate the unpicturesque, preserving the poetical and the decorative, in that degree does one succeed in art.

It may, therefore, be advisable for me to slightly modify my first statement to the effect that although two persons may see practically alike, the feelings and



PHOTO-PICTORIALISTS

A PEACEFUL VALLEY

emotions which nature creates upon those in sympathy with her, as a result of what the eye sees, are never quite the same. Thus it is that the individuality and temperament of the camerist manifests itself in his work, and the pleasing diversity we find in our Salons to-day depends upon the success which has attended the effort to suggest the emotions experienced by the observer as well as the scene which aroused them.

Man is a sociable creature, and working in company with others has done much to promote results in the various branches of art in which he is interested. At first thought one might imagine that, as a consequence, his work, especially in picture-making, and particularly in photography, where much of the operation is mechanical, would bear a similarity to that of his fellow workers. This is true in a certain sense only, or, to be more definite, simply in regard to a certain style or school, which by its character was responsible for the attraction which originally called together in common workers with like tastes.



PHOTO-PICTORIALISTS
THE RETURNING HERD



The interesting and beautiful collection of photographs by members of the Buffalo Pictorialists, which accompanies this article, furnishes a splendid illustration. Taken as a whole, the prints possess such harmony of style and tone, such excellent taste in the manner of presentation, that one might at the first cursory glance readily believe them to be the work of one person of genius and artistic appreciation. More careful study, however, brings forth the undeniable fact that, although all seem to belong to the same school, so far as harmony of character and treatment are concerned, each is distinctly original and independent in conception, and owes its dominant idea to the temperament of its maker. One becomes still more thoroughly convinced of this after being advised that all the pictures here reproduced are different interpretations of the same scene — a simple landscape as several persons saw it.

Such are the workings of individuality. But by what means are the actual results achieved? There is no better way to make this clear than with illustrations, therefore let us consider a certain group of trees, and observe the various effects secured by different treatment, such as selection of the point of view, time of day or year, atmospheric conditions, length of exposure, local modifications on the negative or print and the choice of a printing-medium, all being available means by which the artist-photographer is enabled to record his conception of the scene, and in this way infuse his individuality into the finished print.

In order to more fully appreciate the possibilities in a given subject of rather commonplace variety, I reproduce as the first illustration what might be termed a view, such as would be made by one not far advanced in photography, or possessed of pictorial discernment beyond the ordinary appreciation and ability to see and be attracted by pretty scenes. The material to work with is quite common and familiar; in fact, the subject seems to be a most unpromising one; yet, as the various interpretations show, it is capable of being made into several distinct pictures of artistic merit. All this goes to indicate that the motive is of less consequence than its treatment.

“A Peaceful Valley” furnishes a motive simply made up — one of those land and sky-effects which many workers, who admire the snap of broad sunlight, delight to make. It is the sort of scene one enjoys at the moment and quickly forgets.

In pleasing contrast with this subject is an attractive pastoral landscape, “The Returning Herd.” Both are somewhat similar, except for the manner of treatment and the element of life supplied by the cattle in the foreground of the latter. In “The Returning Herd” we have the same “Peaceful Valley” which we saw in the glaring brightness of midday; but with the longer, softer shadows of approaching evening it is altogether a different picture — one which is long remembered. The scene is in a lower tone; the contrasts are less vivid and more harmonious; and there is that feeling of quiet and repose, that something — call it what you will — pervading the picture which one feels toward the approach of twilight.

In “A Peaceful Valley” the sky is the key-note, and the effect of distance,



PHOTO-PICTORIALISTS

SOMBRE TWILIGHT

which is in keeping with the subject and necessary to the pictorial effect, places the horizon-line low and gives a large portion of the picture-space to beautiful clouds. All this is radically opposed to the idea of "The Returning Herd." Here we have a foreground study in which the chief interest — the cattle — is placed too low, as is the horizon-line — for it is a high horizon that suggests nearness — and it seems to me that the picture is top-heavy where the solid shades of the trees come against the sky. But one can hardly be oblivious to its poetic appeal in spite of these faults — which can easily be remedied by trimming — for in conception and treatment it is a true work of art, and places its maker well to the



PHOTO-PICTORIALISTS

MIDSUMMER

fore among his fellow-workers. Were the print mine I should improve it as suggested, by trimming off the upper portion just above the taller of the small trees at the right.

The subjects considered represent but two conceptions inspired by certain aspects of the scene. There are other possibilities, however, for the observant photographer, of which "Sombre Twilight" is an example of much excellence. It is only another interpretation of the stream and the same group of trees, but with the added element of mystery. The sun is low; the purple mists of evening hang over the water; the long shadows and shafts of mellow light now veil, now illuminate the scene; everything is softened, and even the distant buildings have lost their harshness of outline. We feel rather than see the beauty of such a picture, and the memory of it remains with us long afterward. Breadth, softness, atmosphere and sentiment are found in this print, all of which are qualities which only an artist of unusually delicate sensibilities can achieve. Such qualities are not so much the result of an excellent camera, plate or printing-paper as of keen observation, perception and the knowledge of one's working-tools which enable one to produce the desired effect in the finished print. The trouble is that we photographers do not keep our eyes open enough. We allow the psychological



PHOTO-PICTORIALISTS

A GRAY DAY

moment to pass by, and those delicate gradations, that blending of pearly lights and veiled shadows, that brief moment when some moving object or light-effect forms an ideal picture, have gone forever. If I may be allowed a minor criticism, it seems to me that this print would be improved by trimming a little from the top, thus raising the horizon-line.

"Midsummer" is perhaps the boldest, most original and distinctive interpretation of the lot. There are several good points about the photograph. It is excellent in composition, of a style not at all usual; the lines and masses are well arranged and fill the space in an attractive manner; the contrasts of light and dark masses are distinctly pictorial, while the veil of gray haze, softening the distance, and so well suggesting the humid heat of early August, supplies the desired atmosphere — that mysterious something so tantalizing in its elusiveness, which demonstrates that photography can interpret those subtle phases of nature which are the joy and delight of painters. I could hardly suggest any improvement in this print. One would not wish to change the arrangement of the lines or the grouping of the trees, to eliminate or add anything. It seems that nature made a perfect picture here; but it was an artist of rare pictorial discernment who found it, and determined under what conditions he could best present his own conception of it.

In "September" we have another subject, pleasing to look upon, in which the details have been subordinated and the masses make the picture. The contrasting of lights and shadows is delightful, while the softness and general tone of the print carry out admirably the idea of gentle warmth which one feels in early autumn. The composition, in the main, is good, although there is not complete unity — one can readily see a picture which can be taken from the upper left-hand corner of the print — and the large expanse of foreground in shadow is, perhaps, a little uninteresting and monotonous.

"A Gray Day," the last of this notable list of photographs, furnishes one more example of lack of unity. In sentiment and technique it is all that can be desired; the scale of tones is admirable, and the hazy effect has been charmingly rendered; but one can readily see that there are two distinct pictures — the stream, the trees on its banks and the distant gray building making one, while the large group of trees, the distant white houses and the single tree at the left complete the second. A bit of sky in the first, and of foreground in the second, must be trimmed away; but all the necessary materials for both compositions are there. The print stands as an eloquent example of what selective enlargement may accomplish.



The Shutter Problem

HARRY EDWARDS

THE speed of a shutter is a very difficult thing to define, and I, for one, do not propose to attempt its definition. I refer to it here lest any reader who follows the method described below should think that it has given him the last word about his shutter. It will give him some useful information, no doubt, but the speed is a bigger question altogether, and to prove that it is so, let me point out before getting to practical details that it is not correct to describe the speed of a shutter as the length of time it is fully open, nor is it correct to describe it as the length of time that elapses between the moment when the first minute portion of the lens is uncovered and the last minute portion is again covered.

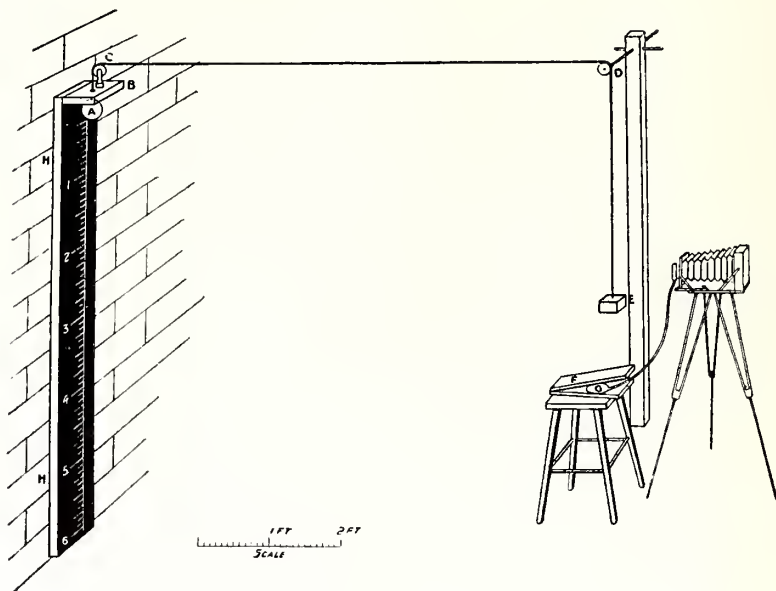
The method given below gives as accurate a reading as any shutter-tester that is within the reach of the amateur — quite as accurate as the testers used by firms who offer to test a shutter for a fee. All these appliances vary in this way: that the more powerful the light in which the test is made, the longer is the reading. That is to say, if, in a weak light, the machine gives one twenty-fifth as the length of a certain exposure, in a strong light it may give a fifteenth or even a tenth as the length of the same exposure. There is no way of overcoming this defect except by very elaborate arrangements.

The essence of the shutter-tester is an object moving at a known speed in a good light, so that it can be photographed. By measuring how far it has moved during the exposure, some idea of the speed of the shutter is obtained. My own early experiments were made by turning a bicycle upside down, against a dark background, fastening at the extremity of one of its spokes a piece of white card, and then spinning the wheel round and waiting till it made one revolution per second, and then snapping off the shutter. It was then possible to find the speed of the shutter by noting what fraction of a complete circle the piece of white card had traveled.

There are three objections to this method. One is that it requires a bicycle that may not be accessible when needed; a second is that it is not very easy to determine when the wheel is rotating exactly once a second, and the third is that the image of the paper is often anything but distinct on the negative. Not having possessed a bicycle for the last two years, I found that I must arrange some other device if I wanted to test the speed of a shutter, and so I have recently been using the following.

It is not generally known, perhaps, that falling bodies, if fairly weighty in comparison with their bulk, travel at a perfectly definite rate, at least for the first few feet of their drop. If we hold a coin up and release it, it will fall a small fraction over sixteen feet in the first second and, after the lapse of that time, it will be traveling at the rate of thirty-two feet per second. Here, then, we have a very easy means of getting something traveling at a known speed.

All we have to do is to select a suitable falling body; and the best thing for the purpose is a steel ball, about an inch in diameter, which any mechanic will turn up for a few pence. It need not be absolutely spherical, but should be given a polish and kept bright. It is best about an inch in diameter, and may have a hole bored through the center. The advantage of a ball is that whatever the direction from which the light is coming, provided, of course, that the light is on the same side as the camera, it is reflected from one part of the ball as an intensely bright spot, which it is, therefore, easy to photograph, and makes a well-defined mark on the plate.



The arrangement adopted in the above sketch should show the method of use. H H is a plank about six feet long which is fastened to the wall at the back of my house. It is faced black, with the scale in white, and has at the top a little ledge, B, projecting about two inches. The black paper off a daylight-loading film-cartridge makes an excellent scale, the feet and inches being set off in white paint. Failing any white paint, strips of white paper may be pasted on. On the ledge, B, is a little pulley, C, such as can be obtained from an ironmonger, and another pulley, D, is fixed about ten feet away.

This part of the arrangement gave me the most trouble. At first I tried getting a friend to drop the ball at a given signal, while I pressed the release of the shutter, but it was only once in a dozen times that the falling ball was on the plate at all. The method shown is very little trouble to arrange, but enables me to decide exactly at what part of the scale the ball shall be photographed. F shows two boards hinged together at one end, and between them is placed the bulb of

the shutter. If the tube of this is too short to allow the boards to be on the ground, they may be on a chair. E is a fourteen-pound weight hung by a thin string from the ball, A, holding A therefore tightly up against the ledge, B.

The camera is set up so that the plate shows the scale on the board, H H, and is focused thereon. An exposure of a quarter of a second is given to get a good clear picture of the scale on the board, and then without shifting the camera the shutter is reset, and the bulb placed between the boards, F, underneath the weight, E. With a sharp knife the string is cut just above the shelf, B, the ball at once drops, and so does the weight, E, which, falling on F, squeezes the bulb and releases the shutter. By varying the distance between E and F the position of the ball when it is photographed can be varied. I generally put a cushion on F to break the fall of the weight. On developing the plate a streak of light on the dark board shows the position of the ball and indicates the speed of the shutter. Now to read the result. Those fond of mathematics will like, no doubt, to work the problem out for themselves. The time the ball reaches any mark on the scale is found by extracting the square root of the distance it has fallen in feet, and dividing that by 4.01. Those who do not care to work it out for themselves can find out by reference to the appended table, which gives the time taken in falling, for each inch up to four feet. Let me give an example. The image of the ball shows that during exposure it fell from the 1ft. 2in. to the 1ft. 11in. mark. From the table below, we find that it reaches the 1ft. 2in. mark .270 second after it started, while it reaches the 1ft. 11in. mark .342 second after it started. Subtracting .270 from .342, we get .072 second as the time during which it was photographed, so that the speed of the shutter was .072 second, or, say, one-fourteenth of a second.

<i>Distance fallen.</i>	<i>Time taken in seconds.</i>	<i>Distance fallen.</i>	<i>Time taken in seconds.</i>
1 inch	.075	2 feet 1 inch	.360
2 inches	.103	2 " 2 inches	.364
3 "	.125	2 " 3 "	.371
4 "	.144	2 " 4 "	.382
5 "	.160	2 " 5 "	.389
6 "	.176	2 " 6 "	.397
7 "	.192	2 " 7 "	.403
8 "	.204	2 " 8 "	.410
9 "	.216	2 " 9 "	.413
10 "	.228	2 " 10 "	.422
11 "	.239	2 " 11 "	.425
1 foot	.248	3 "	.432
1 foot 1 inch	.259	3 " 1 inch	.437
1 " 2 inches	.270	3 " 2 inches	.444
1 " 3 "	.278	3 " 3 "	.449
1 " 4 "	.288	3 " 4 "	.455
1 " 5 "	.294	3 " 5 "	.461
1 " 6 "	.305	3 " 6 "	.466
1 " 7 "	.313	3 " 7 "	.470
1 " 8 "	.320	3 " 8 "	.477
1 " 9 "	.330	3 " 9 "	.482
1 " 10 "	.336	3 " 10 "	.487
1 " 11 "	.342	3 " 11 "	.493
2 feet	.351	4 "	.5 -

— *Photography, London.*

EDITORIAL

Our Annual Contest

INTEREST in our Fifth Annual Print Competition is growing apace. Although the entries are coming in slowly, it is not until within a few weeks or even days before the closing date, Nov. 30, 1907, at noon, that most of the exhibits will arrive. It is so with nearly every exhibition or contest — contributors, for one reason or another, put off the preparation of pictures until the eleventh hour. The publisher's decision to select as the grand prize — accorded to the best collection of prints submitted — a valuable and up-to-date lens of acknowledged superiority, and which is to remain the permanent property of the winner, has been universally commended, and, as a result, the entries competing for the highest honor are expected to be numerous and of an extremely high artistic standard.

A Believer in Straight Photography

AS the working-up of negatives — a process ably described by Otto Walter Beck in his "Art-Principles in Portrait-Photography" — requires a degree of manipulative skill not possessed by every pictorial worker, a writer in the *Glasgow Evening Times* makes a sensible suggestion, and one not new to readers of PHOTO-ERA. He recommends that the pictorialist make the most of every opportunity to create and complete his picture *before exposing the plate*. It is astonishing how pictorially objectionable details may be subordinated and even suppressed by the utilization of the varying effects of atmosphere and shadow. A scene worthy of the camerist's time and enthusiasm merits contemplation at different times of the day, even at different seasons of the year, if this be possible, to observe the effect of shadow and atmosphere upon which the elements of a pictorial scene depend.

Restricting the Promiscuous Snap-Shotter

THE comments of the American daily press on the law recently enacted in Germany, prohibiting the promiscuous reproduction, by photography, of a person's portrait, house or other personal belongings, have not varied greatly in their tenor. Everybody, except the sensational papers, seems agreed that the piratical methods adopted by certain adventurous photographers, aptly termed "camera fiends," are reprehensible and, in spite of the stringency of a law doubtless suggested by some Eminent Person, applauds the new measure. From an artistic viewpoint we cannot admire the results of indiscriminate snap-shotting. No one can help having a certain degree of sympathy for the public speaker, the vocalist or the person trying to avoid the sun's rays, whose facial contortions deserve to be ignored rather than perpetuated by the mercenary camera fiend.

Hats Off to the Jury!

ALL this criticism of the verdict rendered by the official jury at the New England Convention last August is, to say the least, gratuitous and out of place. It is not a subject for public discussion and concerns only the members of the Association. But inasmuch as the jury owed its appointment to President Evanoff, the supreme executive of the Association by virtue of an honest and unanimous election, it ill becomes even a member of the Association to question the integrity of his official acts, which proceed only from the most honorable motives. The jury here consisted of Professor Arthur W. Dow of Columbia University, Mr. Alon Bement, Instructor of Drawing at the City College of New York, and Mr. George H. van Norman of Springfield — all competent and trustworthy men. In fine, no verdict was ever rendered in a prize-competition that pleased everybody.

Right from the Shoulder

EDITOR CHAMBERS of the *Bulletin of Photography*, in the issue of September 4 of that weekly magazine, does not hesitate to call a spade a spade, as he deals a solar plexus blow to the report that his new publication owes its existence to outside pecuniary support. He declares, very emphatically, that the *Bulletin* is absolutely independent, and that all advertisers receive strictly uniform treatment, any report to the contrary being an unwarranted falsehood. It was only recently that the policy of PHOTO-ERA was accused of being controlled by advertisers, some of whom were supposed to derive marked benefits over others. Like the statement disseminated by the editor of the *Bulletin*, this report was circulated among manufacturers — prospective advertisers — with the intention to injure PHOTO-ERA; but our editorial, "There Is Room for All," in the September issue, together with our numerous anti-trust advertisements, indicate that our position also is untrammelled.

A Perversion of Photographic History

IN his inaugural address at the twenty-second meeting of the P. C. U. K. at Hereford, England, last June, President Alfred Watkins, the originator of the exposure-meter bearing his name, took occasion to pervert the history of photography. In trying to dim the glory of Daguerre, whose brilliant achievement he pronounced a mere trifle — "a side issue" — in the evolution of photography, Mr. Watkins declared that, taking a negative and a print as the two essentials of present-day photography and tracing their evolution, the result would be found to be chiefly a record of British invention. The speaker then proceeded to mention the names of a dozen Englishmen as being entitled to the honor of having evolved our beloved art-science. Not a word, if you please, about Nièpce — Daguerre having been promptly dismissed — Balard, Le Gray, Fabricius, Scheele, Seebeck, Petzval, Draper and others not fortunate enough to have been born on English soil. Should not the services of these men be also recognized?

THE ROUND ROBIN GUILD

Conducted by ELIZABETH FLINT WADE

A department especially designed for the amateur photographer and the beginner, in which information, advice and criticism will be freely given. Membership may be obtained by sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, Mass.

"Dear summer is mislaid and lost, among the leaflets dead,
And Winter, in white words of frost, has telegraphed ahead."

It is safe to say that few of us receive winter's frosty telegram, telling us he will soon be here with storms and snows and nipping frosts, with very much jollity. We don't mind winter when he really arrives and settles himself for his four months' sojourn, but we do not like the preliminary message, nor the dull November days when even the sun seems to have taken refuge indefinitely behind the heavy, lowering clouds that fill the skies. Most of all does the amateur miss this genial co-worker, for the sun is a valuable partner in most of his photographic affairs.

However, as we cannot change the course of nature, we must put up with its unpleasantnesses as cheerfully as possible, finding photographic work which may be done when the sun sees fit thus to withdraw himself for days and even weeks. One does not care to go far afield these misty, moist, shivery days; but these same days, when the snug harbor of the home seems specially inviting, are just the days to experiment with lantern-slides, transparencies and gaslight-papers.

A few years ago gaslight-papers were mostly of one grade; now they are made in great variety, and among them one is sure to find a paper suitable for each special negative. The double-weight Velox is specially fine for portrait-work and landscape-work with broad treatment of lights and shadows. In working with gaslight-papers the editor of the Round Robin Guild has found that a slower developer gives a more satisfactory print than a developer used full strength, made according to the formula given with the paper. The slower developer allows of more latitude, and if, by chance, the print is overtimed there is an opportunity to withdraw it before it becomes hopelessly grayed over.

Royal Velox is a cream-tinted paper which lends itself most beautifully to many negatives. The tint of the paper adds a great deal to the beauty of the print, and if one desires brown tones instead of black and white—and the brown or sepia tones are more harmonious for this paper—then the print, after being developed, can be toned or redeveloped according to the formula which accompanies each package.

A few months ago directions were given for making a simple apparatus for enlarging negatives, and those who have not tried this delightful pastime would do well to look up the article and try making enlargements from some of the choice negatives obtained during their summer rambles.

One can use, instead of bromide, the Velox—the Royal Velox being specially good—for these enlargements, and though the paper works slower the results are charming.

Christmas is on the way, the Christmas bells will soon be ringing, and the wise amateur will treasure these hints of dark-day value and make a set of enlargements for that special friend to whom it is so hard to make just the right kind of a present. The set of pictures—of course of places or people with which the recipient is familiar—would be a most "happy-thought" gift.

Taking time by the forelock in this matter of gift-making is one way to ensure a happy and enjoyable Christmas.

Another dark-day pastime for the amateur is the making of transparencies—not the old-fashioned kind framed in metal and hung in the parlor window, but the charming, tinted transparencies, in all sorts of colors—red, browns, greens, blues, in every variation of tone. One may buy the plates ready sensitized for the developing of these colors, or one may develop in black and white and then stain the film any shade desired by immersing it in a specially prepared liquid after directions given in former issues of PHOTO-ERA. Blue transparencies made on spoiled plates from which the blackened silver has been cleared and the gelatine again sensitized are so beautiful that it makes one regret that he has not spoiled more plates, that he may make more transparencies.

The mounting or framing of the transparencies in sets makes them a most desirable gift. Long borders for windows are very attractive. When designed for some special window, take the measure of the sash from side to side, then go to the stained-glass-window folk—there are men of this craft to be found in every city—and have them make a leaded frame like the frame used for stained-glass and set the transparencies for you. It will cost only a small sum for a border to be set on the window-ledge, or, better still, to be hung by two brass rings on hooks at each side of the sash.

A border of blue transparencies for a blue room, the subjects being water-scenes; an olive green for a room in greens and browns; brown for a room in red, and red tones for a room done in grays or dull yellow would be the appropriate tones for the transparencies, and all these tones may be obtained on the plates which are sensitized specially for tinted transparencies.

A transparency set in one of the new fligree-work frames makes a pretty screen for a lamp—or it may be mounted in a handle and used for a hand fire-screen.



G. C. ELMBERGER

MORNING SOLITUDE

FIRST PRIZE — LANDSCAPES

There are so many ways in which transparencies may be used that it is to be wondered at that more amateurs do not make a specialty of this sort of work for the market; and a transparency is as easy to make as a negative — easier, in fact, for the image comes up a positive and one sees at once where to stop development.

For a dark day commend to me the occupation of the transparency-worker.

One of the photographic employments for dark days is the filing and indexing of one's negatives. On putting negatives in order, one should cull out those which have no particular merit. If one cannot bring himself to the point of destroying a negative that is of no particular merit, then do the next thing — store the poor negatives by themselves, so that the case or cabinet may contain only such negatives as are really worth the keeping.

Another bit of work would be the making of a scrap-book of the clippings on photography one has accumulated and for which there has been no good time to get them in shape.

In making a scrap-book, if the clippings are not already classified, then, before beginning to arrange them, go through them and classify according to subjects. A convenient scrap-book may be made of manila paper folded into about 12 x 14 size, and, say, fifty pages in a book. Then have one book for formulas, and another

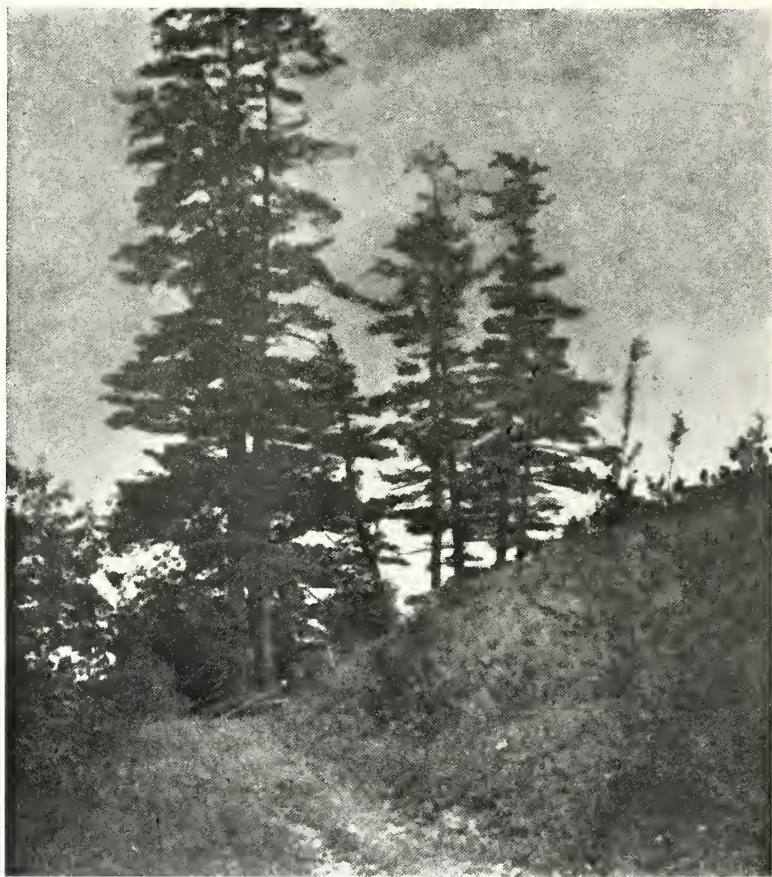
book on printing, etc. A stout string and a ring at the end fastened in the book make this a convenient way of hanging it up when not in use.

One often finds special articles to which, some time after they are read, he would like to refer, but unfortunately can remember neither page nor volume. Have a tablet and pencil when reading; then, when some article is read which seems worth while, make a note of it; then put it in your index, under the proper heading. Label this book "Where I Saw It," and you will find it one of the most useful of adjuncts to your photographic outfit.

THE USE OF DIAPHRAGMS

SEVERAL of our members have asked recently to be enlightened on the correct use of the diaphragms or stops, and what stop to use on certain occasions, and for certain conditions. While this subject may not interest our skilled workers, it is of great importance to the beginner, who must be well posted in the use of stops or else he is practically working "in the dark."

The use of the stop is to correct or reduce the spherical aberration of the lens. By spherical aberration is meant that the rays of light refracted through different parts of the lens do not all meet at the same focus, and the result is an image clear in the center but hazy or indistinct at the edges.



C. L. POWERS

THE PINES

SECOND PRIZE — LANDSCAPES

The stop is used to shut off the marginal rays of light — those that enter at the edges of the lens — and to gather the rays at one point, thus making the objects clear all over the plate.

The bringing of the objects at the edges of the plate into as clear a focus as those in the center is called "enlarging the field of the lens," because it enlarges the space in which objects can be distinguished sharply.

All lenses, except those in small cameras fitted with what is called a fixed-focus lens, are provided with stops of different sizes, to be used according to the strength of the light, the object to be photographed and the style of picture to be made.

The stops are arranged in different ways. First, there are the separate stops, each marked with its different focal value. Then there are the rotating stops, the different sized openings being cut in a circular disk which is attached to the

lens, and by turning the disk any sized stop desired may be brought into position before the lens. Then there is the iris diaphragm, so called because it expands and contracts after the fashion of the pupil of the eye. The iris diaphragm is formed of a number of overlapping leaves of thin metal. These are attached to a revolving ring and open and close as the ring is turned either backward or forward. On the edge of the ring are marked the sizes of the openings at various positions of the ring. This is a very ingenious style of diaphragm.

In making landscape-studies the effect is much more pleasing if a large stop is used. With the larger stop one obtains what approaches aerial perspective — an art term meaning that the objects in the picture appear as they do to the eye in respect to their distance, their proportion, and their lighting. The stop which makes the picture clear at the edges is the one to use. A



GEORGE H. SHEER, M.D.

EVENING

THIRD PRIZE — LANDSCAPES

small stop gives a flat landscape-picture without much contrast.

If, however, one is photographing a view of a town, the buildings are needed to be in quite sharp focus, so that Smith and Jones may both identify their houses at a glance; and in such a case a small stop should be used, as it gives sharp definition.

For interiors a small stop is usually chosen, but if there are glimpses into adjoining rooms besides the one being specially pictured, then a larger stop will give better effects.

For portrait-work the very largest stop that will give good definition is the one chosen by artistic workers. The large stop gives roundness to the figure, better half-tones, and more detail in the shadows. In these later days one tries to avoid as far as possible sharp definition in a portrait. A large stop is used, the focus made soft, and the prints made on rough paper in tones of gray, browns or dull reds.

The smaller the stop used the less light is admitted through the lens, hence the exposure must be longer accordingly. If a stop marked $f/8$ needs an exposure of one second in order to secure a good negative, then the next-sized stop would need double the time of the first stop used, and so on.

In focusing always use the largest stop; and, after the picture is arranged, then insert the stop which will produce the effect desired.

AN IMPROVED REDUCER

AMMONIUM persulphate, while being an ideal reducer in skilled hands, has often proved a snare and delusion for the inexperienced amateur. The following manner of use, therefore, will be found most satisfactory, and without the occasional unpleasant results of a too vigorous action of the chemical.

Dissolve one-half ounce of ammonium persulphate in four ounces of water. Add to this forty grains of sulphite of soda and forty minims of sulphuric acid. This is a stock solution, and, if stored in glass-stoppered bottle, will keep indefinitely.

If a plate does not need much reducing, add one ounce of the stock solution to eight parts of water; but if the negative has very strong, hard high-lights, then make a solution of one ounce to four of water.

Place the negative in a tray and flow with the solution, rocking the tray now and then to ensure even reduction. Examine occasionally, and as soon as the reduction has gone far enough, remove from the tray, rinse well, and place in a hypo solution made of one ounce of hypo to twelve ounces of water. Let it remain ten or more minutes, then wash well and dry. If it is found that reduction has not gone far enough, the process may be repeated.

Monthly Competitions

Closing the last day of every month.

Address all prints for competition to PHOTO-ERA, The Round Robin Guild Competition, 383 Boylston Street, Boston, Mass.

PRIZES

First prize. Value \$10.00.

Second prize: Value \$5.00.

Third prize: Value \$2.50.

Honorable Mention: In addition to the awards, the names of those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be published.

Prizes may be chosen by the winner, and will be awarded in books, magazines, enlargements, mounts, photographic materials or any article of a photographic or art nature which can be bought for the amount of the prize won.

RULES

1. These competitions are free and open to all photographers, whether or not subscribers to PHOTO-ERA.

2. As many prints as desired, in any medium, mounted or unmounted, may be entered, but they must represent the unaided work of the competitor.

3. The right is reserved to withhold from the competitions all prints not up to the PHOTO-ERA standard.

4. *A package of prints will not be considered eligible unless accompanied by return postage at the rate of one cent for each two ounces or fraction.*

5. *Each print entered must bear the maker's name, address, Guild number, the title of the picture and the name of the competition for which it is intended, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film stop, exposure, developer and printing process.*

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA. If suitable, they will be reproduced, full credit in each case being given to the maker.

SUBJECTS FOR COMPETITION

October — "Windows and Doorways." Closes November 30.

November — "Genre Studies." Closes December 31.

December — "Home Portraiture." Closes January 31.

January — "Illustrated Poem." Closes February 29.

February — "Mountains." Closes March 31.

March — "Atmospheric Effects." Closes April 30.

April — "Decorative Photography." Closes May 31.

May — "Animals." Closes June 30.

June — "Pinhole Pictures." Closes July 31.

AWARDS — LANDSCAPES

In pleasing contrast to the indifferent success of last month's competition is the very gratifying result of the Landscape Contest just closed. Seldom has there been so large a number of prints entered in a Guild competition, nor have they often been of so high a standard of excellence. This speaks for increased interest and better work on the part of Guild members, which is very pleasing to the editor of this department, and of PHOTO-ERA. It is hoped by both that this interest will be even greater in the coming contests, which can be participated in by almost every worker who chooses.

It has been no easy task for the judges to award the prizes this month; and now that a conscientious effort has been made to give a fair decision, they regret that there were not first prizes enough to go around. The work of all the prize-winners and several of those given Honorable Mention was of such unusual pictorial distinction as to be eligible for the first prize; but, although the shades of difference in artistic quality were slight, they were, nevertheless, apparent, and the relative standing of the contestants, agreed upon by the judges, is indicated by the order of names below.

First prize: G. C. Elmberger.

Second prize: C. L. Powers.

Third prize: George H. Sheer, M.D.

Honorable Mention: Paul Fournier, E. H. Kaufman, D. H. Brookins, J. H. Field, Robert E. Weeks, Wm. Wheelock, Otto Koch, K. Theodor Krantz, A. R. Hutten, M. E. Baumberger, Phil Maxey, Charles E. Smith, Harry G. Phister, John W. Schuler, C. M. Whitney, Samuel F. Frome, Gust Horlin, William Spanton, Kate Mathews, Clare J. Crary, M. A. Yauch, R. A. Buchanan.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.

GEORGE N. H.—A redeveloping-solution of pyrogalllic acid, made as follows, will give very satisfactory results. Dissolve eight grains of pyrogalllic acid in four ounces of water; add eighty drops of a solution of nitrate of silver made up twenty grains to the ounce of water.

ELLIS DEANE.—To grind glass take two pieces of glass, sprinkle thickly with emery-powder and moisten with water. Put the two powdered surfaces together and rub together with a rotary motion, and if you are persevering you will have two fine sheets of ground-glass.

HARLOW D.—By rapidity of a lens is meant the time required by a lens to permit the light to

form an image on the sensitive plate. The speed of a lens depends on the glass of which it is made, the manner of its construction and the size of the working-aperture or diaphragm.

HENRY JOHNSON.—Send to any dealer in photo-supplies and he will mail you a price-list of the different chemicals used in photography. Nitrate of uranium is about eighty cents per ounce; hydrochinon, thirty cents; bromide of potassium, fourteen cents; chloride of gold, fifteen-grain bottle, fifty cents.

WRIGHT G. H.—Sometimes one obtains very artistic results on old platinum. I should not try to restore it by the process you mention, as I am quite sure it would not be a success. Use the paper with negatives of strong contrast and see if the results do not please you.

L. M. COLEMAN.—From the films enclosed I should judge that your developer was either very full of sediment or that the films were washed in running water that was gritty and the tiny particles had settled in the film. The film is so spotted that it would be an almost hopeless task to attempt to touch out all these pinholes. The better way is to destroy this negative and make a fresh one, taking due precaution against a recurrence of the pinholes.

ATHEL BRILL.—To prevent prints from curling when dry, they may be subjected to the same treatment as for films: immerse for five minutes in a bath made of glycerine, one-fourth ounce, and water, sixteen ounces. Sometimes drawing a print to and fro over the sharp edge of a drawer will straighten it so effectually that it will never curl again. If the print is on solio or gelatine do not bend the paper too much or it will crackle the surface of the film.

S. A. W.—The trouble with your negatives is that they have been over-exposed and under-developed. Extra rapid plates should be handled with care, and in making an exposure remember that they are a great deal more rapid in action than the ordinary plate, and time your exposures accordingly. I should recommend using a slower plate. The extra rapid are needed only for very special occasions.

WILLARD J. C.—A number of illustrated periodicals advertise for photographs. One wants pictures of unusual or curious objects; another wishes children's pictures; another advertises for pictures suitable for advertising-purposes; so by looking up such publications you ought to find a ready market for your pictures. Did you notice the advertisement in the August PHOTO-ERA for photographs? Better try that market.

F. N. LOWE.—There are several handbooks published on the making of ferrotypes, probably the English one by H. Snowden Ward is as practical and plain as any. The process is not very complicated and is easily learned.

B. F. BENSON.—Fabrics sensitized with blue-print solution are finished in the same way as if made on paper—simply washed in running water until the whites are clear. The pictures are permanent, neither sun nor hot water seeming to have the slightest effect on their color.

Print-Criticism

Address all prints for criticism, enclosing return-postage at the rate of one cent for each two ounces or fraction thereof, to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. Prints must bear the maker's name and address, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.

E. C. M.—The picture which you submit is an attempt at a good genre-study, but not altogether a success. The picture represents a young girl standing by a window preparing some sort of vegetable, while by her side is a cradle. One foot is on the rocker, as if in readiness to stir the cradle should the infant waken. The fault with the girl's position is that her hands are held so stiff that one feels the tension of the muscles in looking at them, as if she were afraid to so much as move a hair's breadth, and this stiffness of attitude extends to the head. The subject has been told to hold still and has consequently held so "still," that she gives the impression of suspended animation. Try to have your subject keep on with whatever task she is doing until everything is ready for the exposure. Then, with bulb in hand, watch for the moment when the attitude is desirable, and, with the words, "Keep that position a moment, please!" make the exposure—and the picture is made, and one is almost sure of a successful pose. In making a figure-study the better way is to first get everything ready, then call in the subject.

F. D. C.—This is a picture of an interior, well lighted and point of view carefully chosen; but the room is so crowded with furniture and bric-a-brac that it might pass as an interior of a curiosity-shop. Evidently the artist has tried to crowd everything in the room worth looking at into the field of the lens—a common fault with the beginner in interior work. Make the arrangement simpler, remove some of the chairs, tables and candlesticks, and try another picture from the same point of view. You will be much better pleased with the result.

A. R. J.—This is a portrait of a middle-aged gentleman reading a newspaper. It is very well posed, will lighted and the arrangement of the paper very skillfully managed so that it does not take up the whole of the plate. The editor would like to see other examples of your work.

R. T. D.—A seascape with beautiful detail in the shadows and the high-lights just the right intensity. This picture, so the card says, was taken on a cloudy day with a large diaphragm and a specially rapid plate. The sky-values are fine, and if this is an example of your seascapes you ought to make a specialty of that sort of work. If you care to you will find a ready sale for such prints as this. I would suggest trimming off about an inch at the left.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

Conducted by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to Phil M. Riley, 383 Boylston Street, Boston, Mass.

THE LUMIÈRE COLOR-PROCESS

THE most-talked-of photographic innovation to-day is the new Lumière Autochrome plate — already mentioned in PHOTO-ERA — which represents the highest achievement thus far attained in color-photography. Its chief drawback is the fact that the finished result is a glass transparency from which no satisfactory duplicates can be made either on glass or paper. To offset this, however, are many pleasing features, chief among which is the fact that the final result is obtained on a single plate by a single exposure, as well as the remarkable fidelity in reproducing color, atmosphere and gradations of tone. Although the sensitive film is exceedingly delicate, and great precautions must be taken to prevent injuring it, no special skill is required above that possessed by the ordinary photographer. As there is no balancing of screens, dyeing, triple registrations and printing, it is about as easy to produce a color-transparency as it is to make an ordinary negative and take a print from it.

HOW THE PLATES ARE MADE

The preparation of Autochrome plates is a very delicate and complicated process, and the makers deserve great credit for having successfully solved the difficulties of manufacture. In the first place, starch-grains are sifted by a special machine so as not to exceed a diameter of 0.0004 to 0.0005 of an inch, and are divided into three portions, colored respectively red-orange, green and blue-violet. The dyed starch-grains are then mixed in such proportions that when dusted over a glass plate, previously prepared with an adhesive coating, the result, when viewed by transmitted light, is perfectly white in appearance. The particles forming this stratum are so small that, when viewed by reflected light through the glass of the plate, they present a uniform, dark, blackish appearance. Of course, all superfluous grains must be removed so that, as far as possible, none shall be over another and no portion shall be left uncovered. This has been one of the most difficult problems of manufacture, and one must admire the skill with which the inventors have overcome it. This is all the more remarkable when one realizes that there are more than five million grains to the square inch. At this stage, the plate is subjected to a high, rolling pressure, by which the grains are crushed and flattened so as to form a mosaic with but slight interstices, which are filled with particles of finely divided carbon to prevent the passage of light between the grains. After a protective varnish has been coated over the layer of colored grains,

an extremely thin panchromatic sensitive emulsion is applied in the usual way. Such is the Autochrome plate; and perhaps one of the most interesting features about it is the fact that the stratum of starch-grains, which furnish the necessary color-screen during exposure, is the same screen that differentiates the colors to the eye in the finished transparency.

As to the working of the plate, let us consider what happens when we photograph a blue-violet object, knowing that the same theory will apply to all other colors and combinations of colors. In exposing, the glass-side of the plate is placed toward the lens so that the light must pass through the color-screen of starch-grains before reaching the sensitive emulsion. The blue-violet light passes, unchanged, through the starch-grains of that color, but not through the green and red-orange grains. Upon development, black image-particles will be found under each violet particle of the color-screen, while nothing develops under the green and red-orange particles, as no light passed through them to the sensitive emulsion. When the permanganate reducer is applied it dissolves the black image-particles under the blue-violet starch-grains, leaving the unaltered silver bromide under the green and red-orange starch-grains partially opaque. Upon inspection at this point, transmitted light passes through the blue-violet starch-grains, but is partially prevented from penetrating the green and red-orange grains by the undeveloped, creamy silver bromide underneath. As a result, the image looks blue-violet as the object does in nature. When the plate is placed in the second developer the silver bromide is made more opaque and the colors are brightened; later, intensification reduces the bromide to metallic silver, which still further increases the intensity of the colors. Then the unaltered silver bromide is removed by the hypos bath to ensure permanency.

With regard to the reproduction of Lumière transparencies, little can be said at present. If the image is fixed after the first development, a negative is obtained giving the complementary colors of the original. Theoretically, a contact exposure on a second plate, using the first as a negative, should produce a positive transparency in the true colors of nature. In practice, however, the result is not very satisfactory, owing to the inevitable loss of brightness of the colors and the fact that the sensitive surfaces cannot be placed in contact.

Having briefly considered the theory of the plates, we may take up the manipulations necessary in working them.

LOADING THE PLATES

Since Autochrome plates are sensitive to all colors, as little light as possible should be used while loading them into the holders and during the first development: in fact, these operations should, as far as possible, be conducted in darkness. A very faint and deep ruby-light is permissible if kept at some distance from the working-table, and always behind the operator's back. This is not a hardship, as it applies only to loading the plates and the first development, which is absolutely mechanical.

As the starch-grains, which, in the process of manufacture, are placed upon the glass before the sensitive emulsion, act as the color-screen through which the light must pass, it will be seen at once that the plates must be put into the holders glass-side out. The glass-side should be thoroughly cleaned, and great care taken to prevent scratching the film-side, which is very delicate. To prevent any scratching in the holders, particularly if they are fitted with springs to keep the plates in register, a supply of black cards is furnished with each package of plates. One of these should be placed in contact with the film-side of the plate before insertion in the holder.

FIXING THE LIGHT-FILTER

A special light-filter made by Lumière, the color of which is of the greatest importance, must be used to ensure true chromatic rendering. If used in front of the lens it has practically no effect upon the focus, and the ground-glass focusing-screen must be turned around so that the ground-side is behind, thus ensuring identity of focus on the ground-glass and sensitive emulsion, which, it will be remembered, is on the back of the glass. If the focusing-screen cannot be removed, or if the camera has no ground-glass, the light-filter should be placed back of the lens, for it has been calculated that in this position the focal plane is corrected.

EXPOSURE

Exposure seems to be about the only problem in the process, as everything else is automatic, so to speak. This need not be so difficult, however, with the data furnished, which form a basis to work upon, for the plate requires exposures suited to the subject, and good judgment and the exposure-meter, made use of as in ordinary photography, will simplify matters greatly. The manufacturers state that an average summer landscape in bright midday sunlight requires one second exposure with $f/8$; six seconds are needed if the weather is cloudy. In a well-lighted studio the exposure required with $f/5$ is from ten to twenty seconds.

DEVELOPING THE PLATE

As the necessary formulæ are given at the close of this article, as well as tabular directions for conducting the process, little need be said here concerning the necessary manipulations. As suggested in the paragraph on loading the plates, only enough light should be permitted to enable one to see, in a general way, what one is doing.

The body should be kept between the light and the plate while the latter is being removed from the holder, and, as the duration of development is fixed at two and one-half minutes, no inspection is required, and the tray should be covered during the whole time. After development, and washing from fifteen to twenty seconds, the result is a negative. To produce a positive transparency the image must be reversed by dissolving the reduced silver.

REVERSING THE IMAGE

This process comprises the solution of the silver and a second development with amidol. The reversal and all subsequent operations must be conducted in full daylight. After three or four minutes in the reversing-solution the colors become visible on looking through the glass, but are not so brilliant as later in the process. After washing for fifteen or twenty seconds the plate is placed in the second developer for three or four minutes and then washed once more for the same length of time as before.

INTENSIFICATION AND CLEARING

Before intensification every trace of the preceding developer must be destroyed with Solution E, as directed in the table. This is followed by another washing of fifteen or twenty seconds, after which the plate is immersed in the intensifier to brighten the colors. It should be examined occasionally to see when the action has been sufficient. From one to three minutes will be required, according to the amount of intensification necessary. The solution will soon turn yellow and then become turbid, and should be thrown away when it becomes cloudy. If further action is needed, use a fresh bath. During intensification the whites may become stained yellow, but this will disappear in the clearing-bath, which is to be applied for thirty to sixty seconds after rinsing in water twenty or thirty seconds.

FIXING, DRYING AND VARNISHING

After a brief washing the plate is immersed in the fixing-bath for two minutes. The emulsion is so thin, that five minutes' washing in running water will remove all traces of hypo, and the plate may be drained and dried in a current of air. The protective varnish should be applied cold, and the finished transparency must be protected from the sun and heat, which might produce cracks.

DEFECTS

The manufacture of Autochrome plates is a very delicate operation, and it has been found impossible to absolutely avoid occasional small, black spots. These should be touched out with a fine brush dipped in Solution C, after which the plate must again go into the fixing-bath, be washed and dried.

Pinholes are best spotted out with India ink, graphite or other black color mixed with a little gum-water. It should be done after varnishing.

If the whites are tinged yellow the plate should again be immersed in Solution H, followed by a second fixation and washing.

FORMULÆ FOR AUTOCHROME PLATES

First Developer (Negative)

- A. Pyro 260 grains
 Pure alcohol 20 ounces
 B. Potass. bromide 310 grains
 Ammonia (.880) 17 drams
 Water to 20 ounces

The ammonia directed by MM. Lumière in Solution B is that of specific gravity .02, a weaker variety (20-21% of real ammonia) than strong liquor ammonia .880. The lesser quantity, therefore, given in the formula suffices.

Reversing-Solution

- C. Potass. permanganate ... 70 grains
 Sulphuric acid 6½ drams
 Water 80 ounces

The sulphuric acid in C is the strong acid of 1.08 specific gravity. It should be added to the water, not *vice versa*, and after the permanganate has dissolved.

Second Developer (Positive)

- D. Sodium sulphite (anhydrous) 130 grains
 Amidol 45 "
 Distilled water 20 ounces
 In place of anhydrous sulphite of soda in So-

lution D, double the weight of crystallized sulphite may be taken.

Destroying Second Developer

- E. Solution C 1 ounce
 Water 50 ounces

Intensifier

- F. Pyro 26 grains
 Citric acid 26 "
 Water 20 ounces
 G. Silver nitrate 90 grains
 Distilled water 4 ounces

In F the citric acid should be dissolved before the pyro.

Clearer

- H. Water 20 ounces
 Potass. permanganate ... 9 grains

Fixing-Solution

- I. Hypo 3 ounces
 Sodium bisulphite (solution) 1 ounce
 Water 20 ounces
 Potassium metabisulphite (7 grams or 60 grains) may be used in place of the sodium bisulphite solution in making the fixing-bath.

Varnish

- J. Gum dammar 1 ounce
 Benzole (crystalizable) .. 5 ounces

THE LUMIÈRE PROCESS AT SIGHT

All solutions and washing-water should be used at 60° to 65° Fahr.

NATURE OF THE OPERATION	APPROXIMATE TIME OF ACTION	QUANTITY OF SOLUTION REQUIRED FOR A 5 X 7 PLATE	REMARKS
IN THE DARK-ROOM			
1. First development — negative image (with Solutions A and B)	2½ mins. exact	A, 140 minims B, 140 minims Water to 3½ oz.	Mix at last moment and use only once. If developer is too warm it will eat away lighter half-tones and destroy detail.
2. Washing.	15 to 20 secs.		
IN FULL DAYLIGHT			
3. { Dissolving the reduced silver (with Solution C)	3 to 4 mins.	3½ ounces	Solution may be used several times. If silver is not completely dissolved, stains or dark patches are produced.
4. { Washing	30 to 40 secs.		
5. { Second development — positive image (with Solution D)	3 to 4 mins.	3½ ounces	Solution may be used once or twice. Image will weaken in fixing-bath if development is not carried far enough.
6. { Washing	30 to 40 secs.		
7. Destroying developer (with Solution E)	10 to 15 secs.	3½ ounces	Use only once. If allowed to act too long the details in the high-lights will be lost.
8. Washing	15 to 20 secs.		
9. Intensification (with Solutions F and G)	1 to 3 mins., according to intensification needed	F, 3½ ounces G, 170 minims	Mix at last moment and use only once.
10. Washing	20 to 30 secs.		
11. Clearing (with Solution H)	30 to 60 secs.	3½ ounces	Use only once. If the solution does not act fully, dichroic fog is produced, but is removed by applying another solution of H.
12. Washing	20 to 30 secs.		
13. Fixing (with Solution I)	2 mins.	3½ ounces	May be used repeatedly.
14. Final washing	5 mins.		
15. Drying			
16. Varnishing (with Solution J)			

NOTES AND NEWS

Announcements and Reports of Club and Association Meetings,
Exhibitions and Conventions are solicited for publication

AMERICAN FEDERATION OF PHOTOGRAPHIC SOCIETIES

THE Fourth American Photographic Salon is an accomplished fact. It is the direct result of intelligent, whole-souled and united effort of many months on the part of the several committees in charge. What this work means, the outside world is not in a position to know. There be those who can pick flaws, but would not, if they could, lend a willing, helpful hand. Thanks to the energy and foresight of the officers, the Salon will be *en tour* earlier than usual. It will open the season in "Duquesne Gardens," Pittsburgh, Penn., November 1, under the auspices of the Pen, Pencil and Camera Club. December 2-21 the collection will be exhibited at the Toledo Museum of Art, under the auspices of the Toledo Camera Club. The route-list is not yet completed, but it is stated that the third appearance of the Salon will be in a Western city.

The Salon Club of America, henceforth to be known as the "Salon Club," has withdrawn from the American Federation, simply because it has no permanent habitat and there is no way the members can avail themselves of the benefits of the Federation membership. Nevertheless, their support of the Fourth Salon is as hearty as that given the preceding American Salons, their loyalty to the Federation continuing as firm as heretofore.

Louis Fleckenstein, director of the Salon Committee and chairman of the Foreign Relations Committee, who has contributed very materially to the success of the American Salon, has moved his residence from Faribault, Minn., to the wonderful region of the Pacific Coast — Los Angeles, already the abode of several noted pictorialists. It will not be long before we shall hear that this eminent camerist has surrendered to the charms of the garden-spot of America.

RICHARD HINES, JR., AS POET LAUREATE

WE are pleased to note that Richard Hines, Jr., editor of the photographic section of *The Mobile Register*, has been appointed poet laureate of the Postal Photographic Club, one of the leading clubs in the United States. The appointment was made by Mr. Schonewolf, director of the club, in acknowledgment of Mr. Hines's criticism, in rhyme, of the January album of the club. So far as Mr. Schonewolf is concerned, his labors have resulted in great achievements during the past two or three years, in the work of the P. P. C. Where formerly the prints averaged 5 x 7, they are now generally from 8 x 10 to 11 x 14 in size.

AMERICAN CAMERISTS IN FRANCE

THERE are many American camerists who visit Europe annually. Some of them make protracted stays in some of the most picturesque parts of Europe — the château-district of France, for instance, with headquarters at Paris or vicinity. Those persons may be interested to know that they can obtain a delightful and comfortable home in the outskirts of Paris, and at terms considerably lower than those prevailing in the great French metropolis. Professor Déjardin and Madame Déjardin will receive in their home (forty minutes from Paris) a limited number of boarders desiring to learn or improve their French. This home, situated in a beautiful country, is comfortable and has modern conveniences and a large garden. The river flows near-by. Terms moderate; excellent references, including Mr. Wilfred A. French, editor of PHOTO-ERA, who passed six months with the Déjardins in 1903. Address Monsieur L. Déjardin, "Les Tilleuls," à Butry, par Auvers-sur-Oise, Seine et-Oise, Station de Valmondois, France.

MEETING OF THE POSTAL PHOTOGRAPHIC CLUB

A REUNION of the Postal Photographic Club took place at Hotel Essex, Boston, on the evening of Sept. 5, 1907. As a full meeting of any organization the members of which are so widely scattered as are those of the P. P. C. is next to impossible, only relatively few members of that redoubtable band were present, viz., William T. Knox, William H. Zerbe, Phineas A. Hubbard, Gurdon R. Fisher, E. H. Washburn, James Dana, R. E. Schouler, J. Will Palmer and past-President Wilfred A. French. The occasion proved to be one of rare pleasure, as easily may be imagined. Workers who had freely indulged in criticising each other's prints in the club's circulating-album for years met for the first time, and it is pleasant to record that the utmost good nature and harmony prevailed. Acquaintance begun through the medium of a circulating photograph-album, ably and tactfully conducted by Secretary Brandt — whose absence was deeply regretted — here terminated in friendship. This gives promise of another and larger meeting another year. Before the evening session the club proceeded in a body to the offices of PHOTO-ERA, where it surprised the busy editor. Here they also enjoyed the extensive mural displays of photographic art, native and foreign. The following day a trip was made to Gloucester, the famous old fishing-town. The weather was superb, and many successful pictures were secured of views peculiar to the place.

THE MEDICI SERIES OF COLORED REPRODUCTIONS

It is not often that the art-connoisseur is justified in enthusing over color-prints after the works of great painters. The plates in the series now being issued by Chatto & Windus, London, and which are based upon a secret process, mark the greatest advance yet made in the art of reproduction in natural colors. Indeed, the process here employed goes one step farther; for, in addition to technical accuracy of form, color and texture, it imparts to the facsimile a touch of that atmosphere which distinguishes it from the purely mechanical result. So far the Medici prints are greatly to be preferred to the average copy in oil or other medium of the original picture, and — are infinitely less expensive. Even the much-esteemed reproductions in carbon and photogravure, so dear to the heart of the discriminating art-amateur, will soon be displaced by these new color-prints, which have the added advantage of extreme cheapness. Each specimen of this notable art-series, which is limited to five hundred impressions, is printed on the highest grade of plate-paper and the most stable pigments obtainable are used to ensure absolute permanency. The prints measure 17 x 24 and 19 x 27 inches, with liberal margins, and are offered to the public at \$4.00 and \$6.00 each, respectively, with the exception of Botticelli's masterpiece, "The Birth of Venus," soon to be published, which will be \$10.00. Among the most successful subjects, so far issued, are the mysteriously beautiful head of Christ, by Leonardo da Vinci, and "Head of the Virgin," by Luini, both in the Brera Gallery; "Unknown Female Portrait," by Piero della Francesca, and "Virgin and Child," by Botticelli, these two pictures being in the Museo Poldi-Pezzoli.

Being well acquainted with the contents of the European art-galleries, as well as the various processes of reproduction, we do not hesitate to accord these new Medici color-prints our unstinted admiration — a testimonial as deserved as it is unsolicited.

For full particulars we refer our readers to the sole American agents, Messrs. Foster Brothers, 4 Park Square, Boston.

THE INTERNATIONAL EXHIBITION OF TURIN

THE International Exhibition of Artistic Photography, recently held at Turin, Italy, was an eminently successful affair. It is a pleasure to note that America was well represented and carried off a large number of honors. The Salon Club of America was represented by J. H. Field, Louis Fleckenstein, Dr. W. J. Furness, Mrs. H. P. Gatch, John Chislett, C. F. Clarke, Dwight A. Davis, Wm. T. Knox, Miss Gertrude E. Man, Wm. H. Phillips, Mrs. W. W. Pearce and Wm. H. Zerbe; the Metropolitan Camera Club of New York, by Dr. A. R. Benedict, Curtis Bell, Fred Fischer and P. M. Colman; the Wyoming Valley Camera Club of Wilkes-Barre, Penn., by R. S. Kaufman, W. G. Leach, C. O. Thurston,

S. Gilbert, W. H. Evans and W. D. Brodhun; the Chicago Camera Club, by Harry Master, G. C. Elmberger, John Canuteson, C. W. Christiansen, D. H. Brookins, Geo. Alexander, C. G. Chamberlin, Helen E. Strobhart, F. M. Tuckerman and R. E. Weeks. Exhibitors at large were Wm. R. Freidel, Memphis, Misses Bodine and Lewis, Philadelphia, E. H. Tracy, Plainfield, Charles Peabody, Cambridge, W. M. T. Knos, Washington, and A. J. Gonzales, Mexico. Medals were awarded to Miss E. H. Tracy, Charles Peabody, Dr. A. R. Benedict, Curtis Bell, Louis Fleckenstein, Wm. H. Phillips, Miss G. E. Man and D. H. Brookins.

PRINT-CONTEST AT THE TAUNTON FAIR

THE regular annual prize competition open to all amateur photographers was a feature of the Bristol County Fair, held at Taunton, Mass., Sept. 17, 18, 19 and 20, 1907. Mr. John Truex again demonstrated his ability in assembling a large number of interesting prints from all parts of the United States, there being over three hundred prints displayed on this occasion. It is pleasant to be able to comment favorably on the general excellence of the pictures submitted, some of the displays being worthy of an honored place in exhibitions of greater pretensions. The prizes awarded were fully deserved in every instance, although none was awarded in the still-life class, the entries not being up to the standard. Prizes were all in the form of cash, and ranged from \$1.00 to \$7.00 each. The following is a list of the successful contestants for the best collections of not less than six prints. First prize, Wm. H. Whitehead, of Taunton, Mass.; second, C. M. Whitney, Mt. Vernon, N. Y.; third, E. T. Wood, Campello, Mass.; fourth, A. G. Smith, Brockton, Mass.; fifth, C. R. Tucker, New Dorp, N. Y. General Division, one prize for the best print in each class; Genre — A. G. Smith; Landscape — E. T. Wood; Marine — C. M. Whitney. Portrait-Class — First, R. W. Marshall, Boston; second, Wm. H. Whitehead; third, Mrs. W. W. Pearce, Waukegan, Ill.; and, fourth, Wm. H. Whitehead. Honorable mention, Collection — F. W. G. Moebus, Alameda, Cal.; Landscape — Wm. H. Whitehead; Genre — Edmund A. Darling, Providence, R. I.; Marine — A. G. Smith, Brockton, and P. G. Farquharson, New York City; Portraiture — A. G. Smith. An interesting feature in connection with the awards is that Mr. Wm. H. Whitehead, who carried off the first honors on this occasion, was the first winner of the silver loving-cup offered by PHOTO-ERA in the annual prize competition of 1902. This circumstance was revealed by Mr. Truex only after the awards had been determined. The collection was judged by Mr. Wilfred A. French of PHOTO-ERA. A loan-collection of selected prints contributed by the Bausch & Lomb Optical Co., the Eastman Kodak Co. and the Voigtlaender & Son Optical Co. added greatly to the effectiveness of the exhibition.

PHOTO - ERA

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J. H. GARO
PORTRAIT
N. E. CONVENTION



PHOTO - ERA

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How to Color Photographs

B. I. BARRETT

AN attempt to explain the various processes and epitomize the underlying principles of the coloring of photographs within the limits of a short article precludes the discussion of anything outside of the bare essentials.

It is not necessary to introduce or advocate this attractive work. Yet it is not out of place to assure the beginner that there is probably no other branch of what may be termed amateur art that so quickly repays honest and painstaking labor with artistic results and not less encouraging financial returns. Omitting the paragraphs usually devoted to the expression of the author's personal feelings and the description of fine things that the amateur may, but probably will not, do quite after the manner of the lilies of the field, we will assume the student to be possessed of artistic taste but without practical experience with the brush and colors.

There are certainly three absolute necessities: suitable subjects for coloring, proper materials and some knowledge of the principles of color. The instructions in this number are intended for work upon platinum paper. They also apply to prints upon sensitized water-color paper, some grades of Velox and other papers that have a good surface that will take the color without previous preparation. The medium or extra rough platinum is the most satisfactory.

SELECTION OF PRINTS

Experience will soon teach what are the best subjects or prints to color. At first, light prints will give the best results; later, darker subjects and prints will be liked and, as one gains experience, it will be seen that different treatment for the varying qualities of the subject and print will bring more artistic results. The beginner should beware of deep black shadows or pictures without clear high-lights, as well as the "too contrasty" print. At first nothing is worse than an all-gray tone throughout, which affects every color and leads to muddy and discouraging results. With experience, bad prints may be overcome, but it would be wrong to discourage one's self at first with unnecessary difficulties. The next and concluding article will be illustrated, as far as possible, with examples from this magazine. Good subjects for color abound in the May and June numbers

for this year. In the July number, on pages 9, 11 and 15 are excellent examples of dark shadows that are not too dense, and of pictures low in tone but relieved by high-lights that make it possible to obtain rich color-effects. Should the high-lights be lacking, the colorist can add them. If he have a weak, under-exposed or badly-printed photograph, he can add just the bit of light or shadow necessary to improve it. There is no limit to the good work that can be done with the brush in such cases.

MATERIALS

At any art-store boxes of colors may be purchased for twenty-five or fifty cents, with which very pleasing work may be done. These colors resemble Aniline dyes and cannot be depended upon for permanence. Their chief merit is that they enable the amateur to acquire experience in mixing colors and some skill at very little expense. Really artistic effects can be obtained only with the best of materials. The dull gray of the print can be overcome only by pure and true color. The Winsor and Newton water-colors, and some of the most expensive shades, are necessary for satisfactory work. A half-tube of the right and only color to produce the effect, so much admired, may cost more than the whole box mentioned above. It will also do about as much, and a great deal better, work. The following is a good selection. The half-tubes will hold their moisture longer than pans.

<i>Reds.</i>	<i>Blues.</i>	<i>Yellows.</i>	<i>Greens.</i>
Vermilion.	New Blue.	Orange Cadmium.	Emerald.
Rose Madder.	Prussian Blue.	Yellow Ochre.	Hooker's No. 1.
Alizarine Crimson.	Cerulean.	Aureolin.	Viridian.
Light Red.	Antwerp Blue.	Raw Sienna.	

Browns.

Burnt Sienna.	Burnt Umber.	Sepia.
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Payne's Grey. Chinese White.

The ordinary camel's-hair brushes in quills are good, but flat fitch brushes will be found to do much better work. A pointed sable about No. 3 for fine lines, and three flat fitch brushes of different sizes will be sufficient. Unless the photographs are large there will be no need of a brush larger than a half an inch at the ferule, if flat, or the size of a small lead-pencil if those in quills are used. If an easel and palette are dispensed with, the colors may be mixed upon a plate, or individual butter-plates, and the print tacked to a good-sized board, which is heavy enough to be perfectly firm when placed against a table with the lower edge resting in the lap.

FOREWORD

There are a few simple facts in regard to the distribution, the tone and the proper harmony and contrast of colors, and a few general rules that are of great assistance in their use. Success in coloring photographs depends more upon a knowledge of these first principles than anything else. It would be an impossibility to set these facts all down here; so the only thing to do is to recommend the best handbook for the amateur upon this topic. At any art-store may be

purchased or ordered a little book called "Hints on Sketching from Nature," by N. E. Green. It is published in three parts, at forty cents each, and treats of perspective, composition and color. It is concise, interesting and well illustrated, and would be a valuable aid to any amateur photographer, in many ways. The volume devoted to color will save the amateur many hours of discouraging and unnecessary labor.

It is well to observe good colored photographs, noticing only what colors are used in the sky and distance, the middle distance and foreground. This should teach you that the sky is laid on in flat washes of thin color, the distance and all large spaces in a similar manner, and the foreground is worked out in detail with heavier or thicker color and a drier brush. In practising with cheap colors it is best to do nothing more than wash or tint the picture, leaving the photograph to give all the shading through the transparent color. This is the safest method for the beginner for some time.

THE SKY

We will suppose the first attempt to be a landscape. When the actual work begins, the first thing to be considered is the sky. It is well, for the sake of blending the washes, to sponge the print with clear water, removing any extra moisture with a clean blotting-paper. The lower portion of the sky, being much lighter and less blue than it is overhead, will be left as it is or washed with a very thin yellow. For this use Yellow Ochre, very much diluted with water, and the largest and softest brush, carrying the color across from left to right with a firm horizontal stroke, and at the end taking up the extra color on the edges of the wash with the partially dry brush or blending it off with clear water. When this is nearly dry, a wash of Rose Madder will give a very good color, but should not be carried as low toward the horizon as the yellow. It is best to allow the yellow to become quite dry before using the blue, especially if it is at all strong, to prevent any danger of a greenish tint. By turning the print upside down and beginning with light color, adding more blue at the bottom, which will be the top when it is done, we will get the proper gradation of color with very little trouble. The color naturally runs downward and settles more heavily at its lower edge. If the print is dark, Antwerp or Prussian Blue will cover it better than the other blues.

THE DISTANCE

The distance is the simplest portion of the picture to handle. As the effect of distance and atmosphere is to soften both color and form, the chief care should be to cover the print, not too heavily, with soft, indefinite touches of gray blue or purple. One should remember that cold colors, grays and blues, have a tendency to recede from the eye; while warm colors, those containing red or orange, come forward, and should be used sparingly except in the foreground. To illustrate this we will say that a blue hill looks farther away than a purple one, whether it actually is or not, because of the warm rose color in the purple. For the same reason rose color is safer to use in the distance than Vermilion, which is a much warmer shade of red. A very little study of nature will open our eyes



WM. H. ZERBE
EARLY MORNING MIST
THIRD AMERICAN PHOTOGRAPHIC SALON





PAUL R. MORRISON

MY YOUNG MAN

to what is called atmospheric effect. Some moist, hazy day we will notice that the distant hills are blue, when, in reality, they are as green as the grass at our feet. That green is the "local color" which has no place in its full strength except in the foreground. If the beginner will hold a strip of paper so that it will cover all except the immediate foreground and the extreme distance, he will be able to judge of the difference in color. The middle distance can be treated with somewhat stronger tints. Viridian or Emerald Green toned with Cerulean Blue will give cool, blue greens. It is very easy to say put blue here, purple there, and green elsewhere, and yet give very little information. It makes a great difference what blue or what green. Some colors that are very useful upon white paper are quite as useless over a print. For this reason the list of colors given should be adhered to closely at first. One can safely make Yellow Ochre, Rose Madder and New Blue the main dependence for skies. Streaks of Gamboge, Cadmium

and Vermilion will give brighter sunsets. The gray, blue and purple of your skies can often be used in the distance; Rose Madder with New or Cerulean Blue for a delicate purple; Alizarine Crimson and Payne's Grey for a heavier shade. Antwerp and Cerulean Blue are useful for sunshiny skies and to shade distant greens. A beautiful pearly gray is made by adding equal portions of Yellow Ochre and Rose Madder to a larger quantity of New Blue. Sometimes nearly the same effect is obtained by washing the yellow and pink over the gray print. One should beware of bright red, yellow or green in this portion of the picture.

THE FOREGROUND

By the time the foreground is reached the moisture from sponging the print will have nearly or quite disappeared, which is as it should be. The softness of the sky is imitated by thin washes over damp paper. The crisp details of the foreground are worked out with stronger color and a drier brush on dry paper. It will be seen, by examining the colors, that all of the bright warm reds, yellows and greens have been reserved for the foreground. It is now impossible to state with any certainty what colors to use, since there is no limit to the agreeable combinations and no occasion to restrict their use. Having selected the local color, apply a light wash, which must not be stronger than the high-lights are to be. The shadows can be strengthened afterward. The whole method now is to wash the high-lights lightly and then work up the details by means of the shadows. It is a mistake to suppose that because the picture is to be only partially colored, the colors do not need to be strong. Directly the opposite is the case, as the color of the print tends to deaden the colors so that they often need to be much stronger than when working on white paper. This is particularly the case with the foreground. In coloring a photograph you are always working over a surface that already has color, gray or brown usually. The color will not dry out quite the shade you are using, and you have to calculate what effect the photograph will have upon it. As a general rule the reds and blues are dull and gray. They must be used very strong. The yellows are inclined to look green. Adding a little red to give a warmer tone will counteract this. The greens are apt to be a little cold and need to be coaxed into life with warm yellows and browns. Raw Sienna and Burnt Umber are excellent for this. Burnt Umber and Prussian Blue make a green for shadows darker than any in the list. Black should be made by mixing Payne's Grey, Alizarine Crimson and Sepia. Although the use of white is not to be recommended to a beginner, a little in the far distance will make his colors recede beautifully, and one can hardly resist the temptation to add high-lights to a snow-scene. With a sepia print it is best to use the color of the print as a warm undertone for the shadows and to select all tints to harmonize with the print. One should not conclude, because less space is given to this portion of the work, that it is of less importance. On the contrary, there is no place where good or bad work tells so effectually. The foreground should be kept until the last, and upon that expended all the patience and skill.

(To be concluded.)

The Small Camera as a Pictorial Convenience

Part II. — Advantages of Selective Enlargement

WILLIAM F. ZIERATH, M.D.

PICTURES of a size suitable to hang on the walls of a Salon or exhibition are a prime necessity. "Yes," say the large camera enthusiasts, "I agree with you there. That is why I use an 8 x 10 outfit." But small negatives do not necessarily mean small prints. The enlarging-process affords the manipulator of the Kodak the means to present the product of his negatives in any size he desires, and in any medium he chooses, whether it be bromide, platinum, gum or carbon.

The modern pictorial photograph is a mean between the excessively sharp detail-rendered photograph of the past decade and the extreme "fuzzytype" of a later date. Its softness and delicacy of half-tones is in sharp contrast with either of the former, and its power to please far greater. Enlarging from small negatives contributes, in no small degree, to the attainment of soft effects.

And this brings us to the subject of printing-mediums, and at the mere mention of enlarging and enlargements, bromide papers are at once suggested. The variety of grades, surfaces, speeds and possible tones of modern bromide papers, to-day, are so great that, if one wishes, he may confine his printing to this medium and still be able to produce results of the greatest pictorial value and diversity.

My own experience with the use of bromide papers has extended over a long period of time and embraced the use of Monox, Rotograph and Eastman products extensively. Of late years the Eastman papers have been used, almost to the exclusion of the other makes, and, taking them as a type, the peculiar advantages of the various surfaces and qualities will be spoken of.

The secret of success in the use of bromide papers is the adaptation of the paper to the intrinsic qualities of the negative. The effect desired is constantly to be borne in mind. Developing and toning formulæ are so numerous and varied, and the ultimate results so uniform, that the reader will be permitted to select those best adapted to his peculiar wants, rather than taking up space unnecessarily in this article. Certain general principles underlie the use of all of them, and slight modifications do not materially influence the final result.

The limitation of the scale of graduation in bromide papers has been their chief fault, up to recent years, but of late the manufacturers have so modified their emulsion formulæ that that accusation now has little basis in fact. By varying the strength of the exposure-light and the strength of the developer any desired degree of contrast or softness can be obtained. Full exposure and diluted developer tends toward contrast, while short exposure and fresh, strong developer will give us soft effects. This latter modification, too, gives us those delicate, gray platinum tones which no nearly approach the real article that, very often, close inspection is necessary to detect the difference.

Eastman's Platino Bromide is particularly well suited to the attainment of platinum tones. For negatives having an abundance of half-tones it is unexcelled. Personally, its use in the interpretation of nebulous effects has given results that platinum could not in any degree approach. The heavy rough kind is especially desirable, where breadth and distance are the chief artistic points to be emphasized. This paper, when retoned in the ferricyanide-sulphite bath, gives a most pleasing copper-colored brown. In making prints, with the intention of retoning them, particular stress must be laid on the fact that short exposure and full development give finer tones than long exposure and short development. This paper, too, is especially well adapted to staining with the various aniline dyes, as it takes the dye readily and uniformly.

With negatives having broad shadows, and where snap and brilliancy in the print are wanted, Velvet Bromide gives splendid results. Sunset effects, landscape, sea and surf and brightly-lighted snow-pictures are exceptionally well rendered on this brand of paper. The artistic value of most sunset pictures is marred by the lack of any detail in the shadows. The slight sheen of the semi-gloss surface corrects this defect in no small measure. Retoning gives fine results in sepia, blue, green and red chalk, but great care must be exercised to see that the paper is well fixed and washed, otherwise dark spots will appear in the finished print after toning. Washing by hand is the only sure method of eliminating all the hypo. Mist effects are not as well rendered on Velvet Bromide as on the Platino brand. The amount of sheen is not so great as to detract from the artistic qualities of this paper.

For broad sketchy effects, where it is intended to convey an impression of sunshine and warmth, sepia-toned Royal bromides give results that can be obtained with no other medium, except possibly sepia platimums, and even then, Royal bromides stand the comparison much to their own credit. Richness and elegance are the chief characteristics of this paper. The delicate cream tint of the stock accentuates the sepia effect when this paper is retoned. Often retoning is unnecessary, the warm black of the untuned print harmonizing beautifully with the general theme. For an autumn landscape this is the ideal paper, especially the rough variety. The rich sepia is very suggestive of the brilliant color of the October forest. There is just enough gloss to bring out the detail in the shadows, but not enough to, in any way, detract from its manifold artistic qualities. When prints on this medium are made through bolting-cloth held an inch or two from the paper the effect of breadth and distance is greatly increased. Negatives which will yield only ordinary prints on other mediums will, by the aid of bolting-cloth and Royal bromide, toned sepia, give us results that are, to say the least, surprising. One great fault of bromide and other developing-papers is the slight separation of planes. The perspective is too short. Distance is too sharply rendered. This is due to the fact that the gelatine emulsion with which the paper is coated is exceedingly thin. The rough papers relieve this difficulty in no small measure; and when properly exposed and developed, distance is as well rendered as in a kallitype or platinum print.

In the majority of cases bromide papers will serve every purpose in the making of positives, but there are occasions in which a platinum or a gum, a kallitype or a carbon, will be more suitable. Here an enlarged negative is necessary. One may make a glass contact positive the same size as the film negative, and then make an enlarged glass negative from that. A better plan is to use negative-paper or the thin smooth Eastman's Platino bromide. The paper negative may be made as an enlargement from the small glass positive. These paper negatives permit, in a remarkable degree, the correction of defects in the original negative by the aid of a stump and powdered plumbago. High-lights may be accentuated, clouds put in and undesirable shadows entirely eliminated. Water-colors may also be used. High-lights may be reduced by friction and powdered pumice-stone. Probably the best method of making enlarged paper negatives is to make an enlarged positive on paper, correcting the defects in this as much as possible, and then making a negative on paper by direct contact exposure and again making corrections. The paper negatives may or may not be made transparent by the use of paraffin rubbed on the back and then passing a hot flat-iron over them. When the negative is not rendered transparent printing is somewhat slower, but that is of little consequence.

Enlarged paper negatives can also be made directly from small prints by the copying method, substituting the paper for the ordinary dry-plate in the holder. This, of course, presupposes access to a large camera. Negatives made on the negative-paper yield prints, in platinum or gum, which are the equal of those made from negatives made directly in large-size plate-cameras. In fact, to secure sufficient diffusion it is the habit of many workers to place or move sheets of transparent celluloid between the large glass negatives and the printing-medium.

Another point to be mentioned in the use of the small camera is the advantage of selective enlargement. By that is meant taking only a certain portion of the negative and enlarging it. There is no reason why one should enlarge the whole negative and then trim the print. Select the portion which will present the best composition and then enlarge that. And this brings out another favorable feature of the small camera; namely, as most pictorial photographs made with the small camera are made with the intention of making enlarged positives, it is a good plan to include just a bit more of the scene than is really necessary. Such a procedure on the part of the owner of the large camera would be a waste of dry-plate space, but it is frequently observed, after the print is made, that just a little more foreground or sky would have strengthened the composition very materially. Often, too, one finds that, instead of having a single composition he has the material for two good pictures, the composition of the one overlapping that of the other. In street-work this is especially true, and it is always well to give the main subject the center of the negative, with plenty of room to spare on all sides of it.

Many of our most noted pictorialists use a small camera for a generous share of their work, and, perhaps, the majority of genre studies are productions of the small camera.



WENDELL G. CORTHELL
 HOUSES PILED ON HOUSES — CAPRI
 DANCING THE TARANTELLA — CAPRI



What My Camera Did In Capri

W. G. CORTHELL

IT did not do anything mean. Oh, no. The shutter did not break or refuse to work; the Goerz lens did not repine because it was not a Plastigmat; the box did not leak light. No; that camera tried its best to partake of my feeling.

It struggled to grasp what my sense was enjoying. It wanted to impress on its tell-tale memory the charm of that fairy island that has for centuries reared aloft its mighty and graceful rocks while the Greek, Roman, Spanish, Italian and modern world reveled in its beauty and kaleidoscopic color.

What I saw and felt was color, atmosphere, never-ending charm of sea and landscape, graceful contour of harbor, ever-smoking Vesuvius, the glorious sun by day and dawn; and my poor camera, my willing servant, tried to catch the spirit of it to carry away in its pocket, but — O greatly hampered toy, it could only record a suggestion of what we had seen.

What secrets that camera and I have to whisper to each other! How proud it is that I introduced it to such beauties of nature; that I turned its face on the marvelous rocks that the mighty volcanic Titans of old turned up here for the joy of coming man; that I allowed it to open its eye to the glory of the evening light; that its lens was invited to gaze upon the wide sweep of sea and shore; that it shared with me the outlook upon near-by Sorrento and far-away Ischia and glorious Naples; that it could look upon, if not retain, the blue of the sea and sky, the gentle, soft light of the coming of evening, and the wondrous rays of the setting sun; that even the picturesque peasant was brought to its absorbing notice; that it could share my gaze upon the brilliancy of the gardens, the moss-green walls of the days of Greece and Rome, the never-ending outdoor theater in the square, and the endless surprises of a unique Southern life.

Ah, that camera of mine saw much, but in its slowness of speech can tell so little! It means well, but, like its master, finds its language halting before the memories of glorious days in far-away Capri.

But there was much we were able to accomplish even in such a land of superlative delights.

The people are not Italian, but Greco-Roman, with, however, all the picturesqueness of the Italian. Much of the carriage of material is on the heads of girls and women. The rich color of nature is freely appropriated by the peasants in their dress, and even the men partake of the spirit of color that is everywhere so manifest. The little horses with bright harnesses, and long pheasant feathers on their heads, are not behind their owners in the love of picturesque show. Even the pleasures of the people are simple and unconsciously theatrical in movement and grace. The laugh and dance are spontaneous. In the piazza or square of the town the church, which all attend, is on one side, while the ever-present café is on the other. After church the crowd quickly descends the broad



THE PLAYTHINGS OF PAST VOLCANOES

A CAPRI WALK

CAPRIOTES AS FREIGHTERS

PHOTOGRAPHS BY WENDELL G. CORTHELL



WENDELL G. CORTHELL

TOWN OF CAPRI

steps and at once patronize the café, or press around the Punch and Judy theater, which on Sunday morning is ready set up to catch the spare *centesimi*. The camera may retain impressions of the pretty pergolas, the winding roads and lanes between ancient stone walls, the wonderful gardens which have grown prolific under many warm suns with flowers, cacti, olive-trees, figs, vineyards, oranges and lemons.

It also catches on its film the bald rocks that, like icebergs, rear aloft from out the blue sea; the villas red or white, with many a clinging vine and pretty garden; the fisher-folk and their nets of brown or red, and their boats hauled up on the little beaches.

On every side the life is all so different from the prosaic one we live that there is plenty of work and play for my camera.

And then the wonderful views of island and mainland and far-away Vesuvius, which is never-ending in its variety of smoke and cloud!

But when we come to record the color, the sunsets, the changing sea, not even the painter can do it justice.

The natives never tire of leaning over the parapet at the square and gazing off into the music of the scene. Surely that camera and I shall not soon forget our nine days of delight in beautiful Capri.

The Photo-Chemical Activity of Uranium Nitrate

GEORGE F. PARMENTER, Ph.D.

URANIUM nitrate is one of a number of compounds which the metal uranium forms. It is a chemical well known to photographers and much used by them as an intensifier for plates and films, and also as a toning agent for bromide and the various gaslight papers and lantern-slides.

Uranium itself is found in small deposits sparingly distributed over the earth's surface in the mineral uraninite or pitchblende, and exists principally as the double oxide $\text{UO}_2 \cdot 2\text{UO}_3$.

About the year 1896 Becquerel discovered that uranium and its compounds had the property of emitting rays or emanations, and that these rays had the remarkable property of acting on the sensitive surface of the photographic dry-plate. It was soon noticed also that this action of uranium and its compounds was roughly proportional to the amount of the uranium present in them.

In this connection it is interesting to note that about two years later M. and Mme. Curie discovered in some samples of pitchblende an increased radio-activity which could not be accounted for by the amount of uranium present. On further investigation, that remarkable substance radium was discovered in minute quantities. It was found that it had over nine hundred times the photo-chemical action of uranium, and that the small quantity of radium present in the uranium ore gave to it its abnormal activity.

In Fig. 1 is shown a rather remarkable picture of a piece of uranium ore or pitchblende taken by the emanations or rays given off from itself. The piece of ore was placed in the dark-room on a dry-plate, which had previously been wrapped in heavy post-office paper and allowed to remain for forty-eight hours, and then developed as usual. It will be noticed that the picture takes the rough shape of a skull. This is not due to the shape of the ore, but to the accidental irregular deposit in the pitchblende of the uranium oxides and consequently the increased action on the plate by the rays from these concentrated deposits passing through the paper. It will also be noticed that the emanations are projected from the concentrated areas some little way from the ore. A line will also be seen at one side of the picture due to an old fold in the post-office paper.

Uranium nitrate is formed by chemical means from the mineral uraninite or pitchblende, and in this form it is used by the photographer. It may not be generally known to the user of this chemical that it can itself produce pictures in the dark-room, and by rays given off by itself. Fig. 2 shows a picture of uranium nitrate crystals taken by means of their own rays. The rays passed through two sheets of post-office paper during the forty-eight hours that the plate was exposed in the dark-room. In Fig. 3 we have a "uranigraph" of a bottle taken through several thicknesses of post-office paper by means of a weak solution of uranium ni-



F. A. SAUNDERSON

BOSTON CAMERA CLUB EXHIBITION, 1907

SHADY BROOK



FIGURE 1



FIGURE 2

trate in the bottle. It was found necessary to use a weak solution, as one more concentrated gave off so many emanations in all directions that a general fog was produced, which destroyed almost entirely the image formed, when the plate was developed. Figs. 4 and 5 were made by placing on a dry-plate, which had been thoroughly enclosed in post-office paper — in one case a silver Swastika charm, and in the other an iron key and a few copper pennies — and both plates exposed to the action of uranium emanations for about ten days, and then developed and fixed as usual.

A positive may be obtained by placing a contrasty negative on a dry-plate and allowing the uranium rays to pass through the negative for a number of days. The positive obtained after developing is very weak and much fogged, due to the fact that the intervening film of silver on the negative is so thin that it retards the rays little more than the clear glass. In fact, the uranium rays are able to pass through some little thickness of metal and still be capable of affecting the photographic plate.

In the negative from which the print of the Swastika charm was made, one can distinctly see the engraving on the charm brought out on the plate by the less thickness of the silver and, consequently, the greater action on the sensitive plate by the uranium rays. The detail is lost, however, in the printing.

Much might be said of these rays which are continually given off by uranium and its compounds — how they may be separated into four different kinds, each with its own properties and affecting the photographic plate each to a different degree; how a sheet of aluminium .005 c. m. thick placed over the plate will re-



FIGURE 4

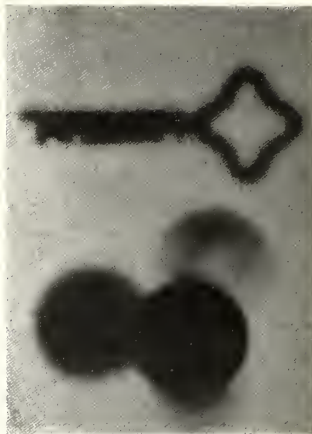


FIGURE 5

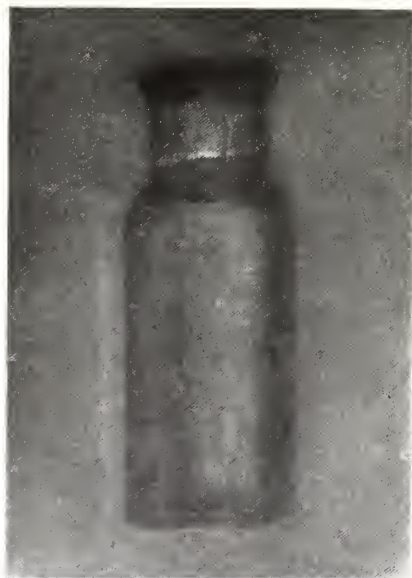


FIGURE 3



WM. C. STARR

A NEW ENGLAND ROAD

tard one division of the rays one-half, while another requires a sheet .05 c. m. thick to reduce the action one-half, and yet another is still more active, requiring 8 c. m. in thickness of aluminium to reduce the action the same degree. We might also tell how each kind of emanation behaves in a magnetic field, and so on, but all this would doubtless be of very little interest to the average photographer.

We see frequently in the photographic journals the warning to keep hydrochloric acid, turpentine, etc., out of the dark-room on account of the injurious action on the sensitive plate. The only warning in connection with uranium nitrate that we have seen stated has been to keep the bottle tightly corked so that it shall not part with its water of crystallization. From the results of the simple experiments described above it will be seen that this common photographic chemical may produce results in the dark-room little anticipated by the photographer, if he keep the seemingly harmless bottle of uranium nitrate near the dry-plate box.

It was found that if a bottle of the nitrate crystals be placed on a box of plates and allowed to remain for a week or so and then the plates developed there will be an image of the bottom of the bottle clearly outlined on the first plate, and perhaps even on the second. In fact, most of the plates in the box will show a distinct fog. While chemicals are not usually kept on the top of the boxes of plates, yet if the plates are badly fogged through two thicknesses of pasteboard and more or less black paper, in a week or two, one can easily see that a prolonged exposure, even at some little distance, might do the very sensitive dry-plate harm.

The Oil Pigment Process

E. O. HOPPÉ

SINCE *The Amateur Photographer* published, nearly three years ago, the first account of the oil-printing process, revived by Mr. G. E. H. Rawlins, little work has been seen in this medium, either because of apparent difficulties or because its full artistic possibilities were not realized till M. Demachy experimented and exhibited pictures that compared most favorably with the gums for which he is so well known. During the past year he has been busily engaged not merely experimenting, but producing masterpieces that were a delight to all who saw them when he held an exhibition in his Paris studio this spring, or later, when they formed a one-man show in the rooms of the Royal Photographic Society in London during June and July. They were truly things of beauty, and the most important manifestation of pictorial photography which has yet taken place either in France or in England—not merely the most important, but the most beautiful likewise, because revealing most effort, and an art that has finely discarded all that fettered its freedom. This exhibition did more to advance the claims for the oil process and to introduce its possibilities than could have been achieved by any other means.

In this beautiful and plastic process M. Demachy very rapidly discovered and made his own that amount of initiative which had at times been refused him by gum-bichromate, and the freedom and latitude allowed him in oil have been fully utilized in his pictures in producing effects that are altogether delightful to the eye.

This “useful tool, but a sharp-edged one” depends for its effect less upon the pigment at one end of the brush than upon the man at the other, for it is not the application of the ink that produces a good result, but the artistic ability of the operator who applies it; that is, for a direct, straightforward print it is less suitable than carbon or platinotype, but for one in which individuality and personal feeling are to be introduced it is unequalled.

While the lines are those produced by the lens, the tone-values are those of the photographer himself, and it depends entirely upon his perception of the artistic fitness of things to make or mar the effect of his picture, the pliability of the medium being so great that, unless he sees the various tones in their correct value one to another, it will be difficult, if not impossible, for him to reproduce them or to make a successful picture.

When it is remembered that the picture is produced on a gelatinized surface that has been variously acted upon by light and the application of ink in small quantities taken up on a brush, it is readily perceived that to make two touches absolutely identical in their effect upon the paper is an almost impossible feat, while to build up two identical pictures by means of a series of local touches is an utter impossibility. Facsimiles cannot, therefore, be obtained, unless we are prepared to accept as a facsimile the reproduction merely of lines and not of tones.

Several important improvements have been made of late whereby the old process of putting the color-matter on a fixed-out P. O. P.— by means of a roller squeegee—has now given way to an immense variety of papers and pigmenting-material, till almost any surface or color may be employed to obtain a particular effect, and by the use of several lithographic and engraving-inks it has become possible to introduce different methods of treatment into one and the same picture. Since the reviver has put the necessary material upon the market, the process is gaining in favor with the amateur who is turning out prints of technical perfection, but which are so deficient in individual treatment that they might far better have been unmodified prints by any direct process; in fact, oil-prints may be divided into two classes—those by Demachy and those by any one else.

It is advisable to have a clear knowledge of the basis of the process before attempting to consider working-details. This may be briefly summarized by saying that a bichromated gelatine-paper, having been exposed to light under a negative, is rendered insoluble according to the gradations of the negative and, on being immersed in water, the image absorbs moisture according to the light-action and, in consequence, the parts which contain much water repel any greasy matter, and those having little water retain it.

The various final supports used in the double-transfer carbon process, platino-matt bromide-paper from which the silver has been dissolved, or any tough paper of a fairly smooth surface, which the worker may coat for himself, may be used for making the print.

To coat the paper with gelatine the following method is recommended by Dr. Evershed and found by him to give better results than the transfer-papers.

Take six grains of thymol, rub it up in a mortar with thirty to sixty minims of alcohol, add this to twenty ounces of water in a wide-mouthed vessel; then one ounce of Heinrich's or Nelson's gelatine is cut into shreds and put in the alcohol and water; the whole is allowed to stand for an hour or more and is then dissolved by the aid of a water-bath, the temperature of which should not exceed 120° F., as otherwise the gelatine will be ruined. When completely dissolved the mixture should be filtered through a couple of thicknesses of Indian muslin. The paper, after being immersed in warm water to remove air-bells, can then be coated by having some gelatine poured in a pool in the water, and by means of a glass rod spread evenly over the whole surface, at the same time removing any air-bubbles or dust. Allow the paper to dry on a level surface, when it can be cut up, if required, and stored; it will keep indefinitely, the thymol acting as a preservative.

The paper is sensitized as an ordinary carbon-tissue, the strength of the potassium solution being varied according to the density of the negative employed; the weaker the negative the weaker the solution. The best oil-prints are obtained from negatives of delicate gradations and no great density, the deep tones of the print being built up by the repeated application of pigment. The sensitizer should not be alkaline and, if it has been found to become so, it must be rendered

acid by the addition of a few drops of sulphuric acid, and will then keep in good condition for an indefinite time if protected from the action of daylight.

Owing to the rapidity with which the paper prints, it is advisable to expose in the shade and remove the paper just before the detail in the high-lights appears, as would be done with platinum paper, the appearance of which the bichromated print greatly resembles. The print is then washed until all trace of yellowness has disappeared, when pigmenting may be proceeded with immediately; or, what is preferable, it is put away to dry thoroughly in order to harden the gelatine and render it less susceptible to abrasion should any drastic measures subsequently become necessary. It then becomes necessary to resoak the paper for several hours till such time as the picture stands out in relief, the high-lights giving the highest relief, as these parts, having been less acted upon by light, absorb the larger quantities of water and consequently repel the oily pigment when applied.

Upon removing the print from the soaking-water it is put on several thicknesses of wet blotting-paper supported upon a firm, hard surface, such as a piece of plate-glass or the smooth bottom of a developing-dish. The surface-water is then removed from the face of the print, a piece of soft, damp linen being used for the purpose; but care must be taken that the moisture is not removed from the saturated and swollen gelatine, otherwise the pigment will adhere in an even coating.

For the application of the pigment ordinary, flat stencil-brushes of various sizes may be used. Those employed by china-painters and known as "dabbers" are better, but, in any case, it is advisable to use only those that retain the natural terminations of the bristles, for, if they have been cut, the harsh, blunt ends will give a coarse appearance to the print which is very detrimental to the delicacy of the tender tones. Immediately after use the brushes must be thoroughly cleansed with soap and water only; benzine, petrol or turpentine should not be used.

The pigment, either that specially prepared, process-inks or ordinary oil-colors in a thick consistency, is spread in a thin, even layer upon a piece of glass, and a small quantity taken up on the brush and applied to the damp print. The manner in which this is done has a particular effect upon the pictorial result. A firm, slow dabbing-movement gives a deposit of pigment and a tendency to flatness, while a quick, sudden jerk of the brush onto the paper and off again immediately has the opposite effect by removing the pigment that had already been applied and thus giving contrast.*

Commence pigmenting by lightly dabbing the color-matter over about two inches square, and then hop the brush over this area; the pigment that is in this way removed may be reapplied to another part of the print, building that up and, at the same time, clearing the brush to go on hopping again. Do not attempt to

*We understand that Mr. Rawlins holds the brush vertically and allows it to drop on the print, catching it on the rebound, and in this way goes over the image. A wire holder has just been placed on the market by an English firm, in which the brush can be made fast during this "hopping" process. A slight pressure of the finger on the long wire handle which extends horizontally from the brush raises or lowers the brush very quickly, evenly and effectively.—ED.



R. DÜHRKOOP

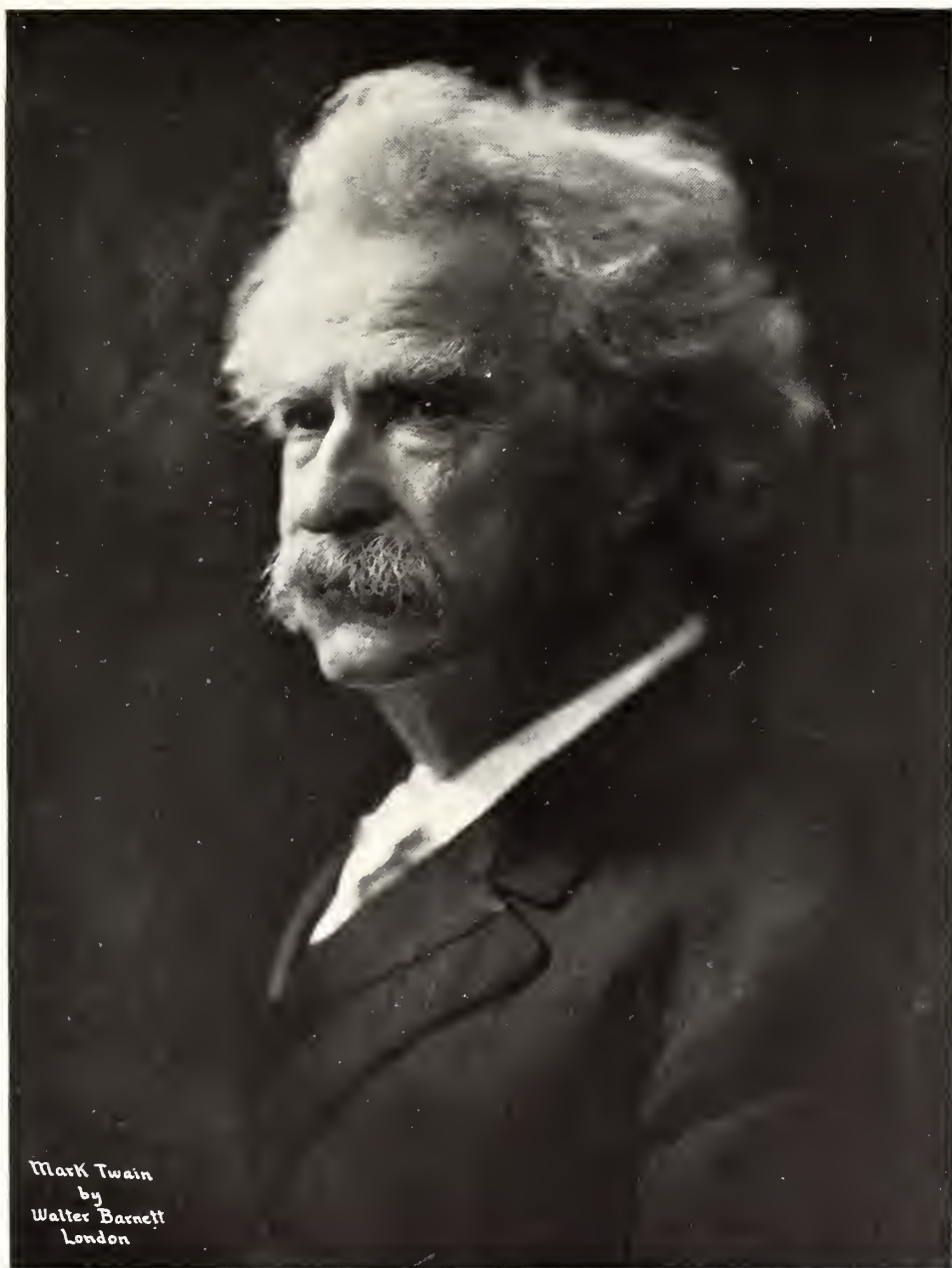
use too much pigment at a time or it will be deposited in lumpy spots that cannot be easily removed. Small applications being repeated will build up the darker tones far better than the removal of pigment will give light ones.

If the picture takes long to complete, it may be necessary to moisten the blotting-paper, or even the print itself, which may be done by placing it in water for a few minutes, when it may be worked on again immediately after the surface-water has been removed. Should it be impossible to complete the picture straight off, it may be dried and finished on another occasion; but in that case it is possible only to build up from the tones already existing, lighter ones than those obtained with the first coating not being possible. The whole can, however, be removed with petrol if once dried; but be sure to have the petrol entirely removed by washing from the paper, otherwise the result will have a dead, sunken-in appearance. Freshly applied pigment may be removed by gently rubbing with a damp cloth, and the whole pigimenting-process commenced anew.

The tabulated failures with the oil-process, together with the causes and remedies, were summarized in the *Photographic News* and may prove of assistance, so are appended in full.

FAILURES WITH THE OIL PROCESS

THE FAULT.	THE CAUSE.	THE REMEDY.
1. Pigment refuses to adhere....	(a) Underprinted image	(a) Print deeper.
	(b) Too stiff a pigment	(b) Thin pigment with megilp
	(c) Too rapid a brush-action	(c) Obvious.
2. The pigment, after first adhering, comes away in small, irregular spots	(a) Too rapid and uneven a brush-action	(a) Obvious.
	(b) The gelatine has blistered	(b) Burn the print.
	(c) Some foreign body on brush.....	(c) Clean the brush.
	(d) Some defect in the gelatine coating..	(d) Generally met with in papers not specially prepared for the process. Use different.
3. The pigment adheres all over, both high-lights and shadows	(a) Printing on the non-gelatine surface.	(a) Obvious.
	(b) Unsuitable negative; viz., too thin...	(b) Intensify the negative.
	(c) Washing-water too hard	(c) Boil the water and allow to cool.
	(d) Overprinted image	(d) Do not print so deeply.
	(e) Insufficient soaking.....	(e) Soak two or three times as long, up to six hours.
	(f) Too thin a pigment	(f) Spread a thin film out, and allow the excipient to evaporate.
	(g) Brush too heavily charged with pigment	(g) Obvious.
	(h) Brush-action too slow	(h) Obvious.
	(k) Deterioration of gelatine, due to (i) too long a soaking, (ii) the use of hot water or (iii) formation of bacteria ..	(k) (i) Throw print away; (ii) ditto; (iii) ditto.
	(l) Drying of print whilst pigimenting ..	(l) Re-soak or re-damp blotting-paper pad.
4. Circular spots refusing to take pigment.....	(a) Formation of air-bells in sensitizing-bath	(a) Brush paper while in bath
	(b) The brush has picked up some moisture	(b) Press brush on clean, dry blotting-paper, and press another piece on the spots.
5. Circular spots taking pigment more freely than other parts of image	(a) Formation of air-bells between surface of gelatine and water while soaking ..	(a) Turn prints two or three times over and remove air-bells when first put into water.
	(b) Puncturing of gelatine	(b) Destroy print.
6. Pigment adheres in streaks ...	Unskilful sensitizing with brush	Sensitize in future by immersion.
7. Pigment is deposited as if "peppered" on to the image	Brush has become clogged	Clean brush by rubbing on a piece of clean, old P. O. P. or bromide-paper.
8. Pigment deposited in irregular areas after soaking during pigimenting	Print has not been put into the water face downward and all the imprisoned air between the surface of the print and water displaced	Obvious.
9. Image pigments up as a negative instead of a positive ...	Unknown	Continue pigimenting, and the reversal may disappear.



WALTER BARNETT
MARK TWAIN



On the Care and Use of Lantern-slides

F. A. WAUGH

IT is surprising how generally lantern-slides are used. Almost every teacher in every department of college and university work depends on them more or less. Some departments of instruction maintain collections of slides reaching far into the thousands. Preachers, lecturers and advertisers collect and use great numbers of slides. Let a man once get in the habit of making or of using lantern-slides, and he may be relied on to use more and more of them with each succeeding year.

Soon thereafter comes up the question of preserving so many slides. How shall they be classified and made easily available? In partial answer to these questions I will give an account of what we are trying to do in the Department of Horticulture and Landscapes Gardening at the Massachusetts Agricultural College. In our work we use large numbers of slides, and are constantly adding more. It is, therefore, altogether essential that we should have some systematic method of dealing with them.

The librarian's methods naturally suggest themselves first of all. The librarians have certainly worked out the best modern systems for handling all kinds of facts and many kinds of materials, as is shown by the adoption of the card-catalog methods into nearly every line of business. It does not require any special flight of inventive genius, therefore, to conceive that lantern-slides might be stored somewhere in numbered compartments and found, when needed, by referring to a card catalog.

The next thing to be done is to find a suitable storage for the slides themselves. Formerly we used wooden boxes for this purpose. Such boxes can be bought of the dealers at seventy-five cents to \$1.00 each; but as we were using them in quantity we went to the box-factory and had a lot made up, costing us twenty-one cents each. We had a certain system in the use of these box receptacles, but as it has been abandoned I will not discuss it further.

Having the card-catalog system with its convenient drawers before us, we were not long in deciding that the slides themselves could be most conveniently kept in that sort of depot. The trouble is that a slide is three and one-quarter inches wide, while the standard card-drawer is only three inches deep. However, we soon found an accommodating dealer who suggested that he could reset the bottoms in the drawers so as to gain the required quarter inch. This he did, and we were able to go ahead once more on the universal unit system.

The ordinary unit holds eighteen drawers. Each drawer is either thirteen or seventeen inches long. We chose the shorter. Such a drawer will hold sixty to seventy slides.

We come now to the next step — and this possibly has an air of originality about it. This consists in combining the card-catalog with the slide-storage drawer. To do this we had a special card made. In fact, each card is a sort of



CHARLES TRACY

THE SIGNAL

folder or envelope, into which the slide drops. On the front of each folder is printed a blank outline, on which the necessary data is written. This becomes, therefore, an ordinary card catalog, but each card is directly accompanied by the slide to which it refers.

These cards may then be arranged alphabetically, by series, by subjects, with intermediate guides, or in any other way most convenient for the purposes in hand. Ours are grouped first by subjects, as pruning, grafting, carnations, parks, native trees, market-gardening, greenhouse construction, etc., etc. Any of these general topics may have many subdivisions, marked by intermediate guides. Within these latter groups the slides would also, of course, be arranged alphabetically.

One of the prime conveniences of this system remains to be mentioned. It will be seen that all the important information regarding any slide is noted on the card. When the lecturer runs through the cabinet and selects twenty-five to fifty slides for a given occasion he lifts out slides, cards and all. Having determined on the order in which the slides are to be shown, he puts them into the box of the man who operates the lantern, retaining in his own hand the data slips. These being arranged in the same order as the slides in the box, the lecturer has absolute control of his illustrative material from start to finish. He can always know what the next slide is to be, and can make his talk lead up to it.



G. R. BALLANCE

MORNING MISTS ON THE RIVER

So when any picture is thrown on the screen he has all the necessary data concerning it. If his audience is inquisitive he has the means of answering any awkward questions.

At the end of the lecture the slides are returned to the proper folders — this work being facilitated by placing corresponding numbers on slides and folders — and the folders and slides are then redistributed to their proper places in the catalog drawers.

How Far to Develop

PHIL M. RILEY

TO the majority of amateur photographers when to stop development is one of the most hazy points in all photographic processes, and over-development the most common fault. Of course the methods of factorial and stand development, now so popular, obviate all this uncertainty and error, depending, as they do, upon a known and suitable formula which at a proper temperature will develop a perfect negative from a plate of a certain brand that has been correctly exposed.

Personally, I have always been a firm advocate of both these modern methods; and when using double-coated plates, they are, necessarily, the only way; but in most ordinary work with single-coated plates development need be but a mechanical process.

Exposure is the all-important thing, and both stand and factorial development are advisable if for no reason other than that they cause a photographer to give more heed to what he is doing with bulb and shutter. This he must give attention to if he would have satisfactory results. Modifications of the developer are not readily effected when these methods are employed, nor are they necessary, for normal development is all that can be desired with a correctly-timed plate. Exposure is the most important and least understood subject in all photographic work, and a more complete knowledge of it by photographers in general would, I venture to say, appreciably decrease the constant waste of plates and films. The fact of the matter is that would-be photographers are not observing enough, nor are they willing to devote time enough to the subject and get a clear understanding of the principles underlying it.

Every amateur photographer, it seems to me, should at the outset, for the sake of his pocketbook, and to raise the average standard of his work, study this important matter systematically. Good judgment based upon experience must ever be the final criterion, but several authoritative books have been written on the subject, and there are exposure-tables and meters, all of which give one a basis to work upon. From this point keen observation, and the tabulation and comparison of results, must be the guide. A fair knowledge of exposure is more easily attained than one might suppose, but the mental satisfaction of power in that knowledge is worth the effort.

But to return to the subject of development. There are occasional circumstances under which the older method of tentative development has its advantages, such, for instance, as a case of known and perhaps unavoidable incorrect exposure necessitating modifications in the developer, or there may be other causes requiring local treatment. Then there are those persons who practise photography for the love of it, who enjoy every step and delight to watch the image appear in the dim light of the dark-room. In any case the duration of development is important, and the error, if any, is usually on the side of over-



G. R. BALLANCE

BOBSLEIGH SPILLING

development. It is such a temptation to let the plate remain half a minute or so longer to make sure of enough detail or density.

That old maxim, "Expose for the shadows and let the high-lights take care of themselves," has been quoted by the old-stager to the tyro since the early days of photography; but its running-mate, "Develop for the high-lights and let the shadows take care of themselves," is not so often heard. Both are true as gospel, however, and should be followed absolutely. Many amateurs think they are carrying out this latter maxim to the letter, but they are getting negatives with high-lights and middle-tones all in one, and no gradation to connect them with the shadows harmoniously.

For convenience in speaking we may divide the high-lights of the latent image to be developed into three degrees of intensity, which we will speak of as A, B and C. After flowing on the solution we continue development until high-light A, that of greatest intensity, has passed through the emulsion and has come down to the glass so that it may be seen on the back of the plate. Here we should stop if we are developing for the high-lights. You may say at this point that you want more contrast and prefer to carry the operation farther. You get increased contrast between the tones of gradation in this way, but at the same time a reduced number of tones; in other words, high-light B has been brought down to the glass with high-light A without increasing the strength of A a whit. It was



C. F. CLARKE
THE BROOK IN WINTER



already on the glass, and beyond that it cannot go. In the same manner high-light C might be brought down with A and B; and if development were prolonged, the middle-tones would gradually join the high-lights on the glass, all the time causing no increase of intensity in the high-lights brought down to the glass, but constantly increasing the steepness of gradation and reducing the number of tones.

Should it happen that as a result of the particular developing-formula used, you desire, in subsequent work, more contrast than it produces, compound a new solution and reduce the quantity of sodium sulphite, but do not carry development any farther. This modification increases the color of the negative, and by controlling its color one can secure almost any degree of vigor desired in the finished print without such a sacrifice of the tones of gradation.

Some reader may try developing for the first high-light only, and condemn the method because the resulting negatives are somewhat thin, but before rendering a final decision they should be printed from — it may afford a pleasant surprise.



Varnishing Negatives

VICTOR WILSON

OFTEN, when printing, spots will appear on the film which are metallic stains and are due to damp.

This will not occur with varnished negatives. When a negative gets cracked, the film generally gets broken; while, on the contrary, with a varnished film it can be floated off and put on a fresh piece of glass. Films likewise can easily be varnished.

Film.— Films need only be dipped in any one of the following solutions:—

No. 1.— Gum dammar, fifty grains; benzole, one ounce. This should be filtered and kept in a stoppered bottle.

No. 2.— Mastic gum, fifty grains; ether, four ounces.

Take the film and carefully dust it with a piece of plush or a tuft of absorbent cotton. Apply the varnish with a flat camel's-hair brush, or immerse the film in the varnish and drain it back into the bottle as shown in Fig. 1. Pin up by one corner to the edge of a shelf to dry. This will take half an hour.

Glass Negatives. Hot Method.— The operation connected with varnishing glass negatives is rather more troublesome, requiring a little patience and care. My method and the hot varnish I use are as follows:—

Varnish Solution.— Bleached shellac, one and one-quarter ounces; mastic, one-quarter ounce; turps, one-quarter ounce; sandarac, one and one-half ounces; alcohol, twenty ounces.

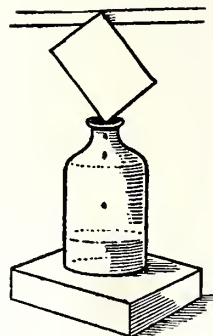


FIGURE 1

Procure the following articles: a fairly wide-mouth, glass-stoppered bottle, some filter-papers, and a glass funnel five inches wide. First wash your negative to free it from dust and dirt. When quite dry, place it in front of a fire in a negative-rack until it is just so hot that you can bear it on the back of your hand. Now hold it with a plate-holder, and pour on to the center of the film of the negative a large pool of varnish. Let it spread out until it has made as large a pool as it can. Then gently tilt the plate so that the varnish can run from one side to the other, taking care not to let it run over the sides. Leave one corner bare. When all else is covered, place it in the funnel, as shown in Fig. 2, with a filter-paper inside the glass funnel. When it has quite finished draining, pour back the varnish into the stock bottle, remove the plate and place it on a stove to dry, or else on blotting-paper over the mantelpiece.

Cold Method.— This method is exactly the same except the warming and drying. Dry only on the blotting-paper. Use the following solution: sandarac, one-half ounce; chloroform, three ounces.

To Remove Varnish.— If it is required to remove the varnish from the negative, first soak the negative for ten minutes in methylated spirits, and then rub the surface gently with a tuft of absorbent cotton dipped in the spirits.

The following are varnishes I have used with more or less success:—

With Heated Negatives.— Celluloid, ten grains; amyl acetate, two ounces.

Another: Orange shellac, two and one-half ounces; turpentine, one-quarter ounce; alcohol or methylated spirits, one pint.

Another: Dammar, three ounces; benzole, three drams; alcohol, ten ounces; oil of lavender, two drams.

Cold Varnishes.— Sandarac, one ounce; chloroform, six ounces.

Another: White hard varnish, *plus* just enough strong ammonia added to yield a clear solution.— *The Practical Photographer*, No. 4.

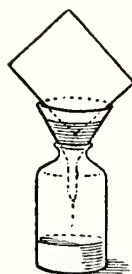


FIGURE 2



CHARLES G. HASS

WINTER EVENING



E. E. DOTY
ELSIE M.
GRAND PORTRAIT PRIZE, N. E. CONVENTION



EDITORIAL

Photography in Natural Colors

THE excitement produced by the results of Lumière's Autochrome plates has yet to run its course in the United States, as it has in England, where more has thus far been made of the invention than in any other part of the world. This is obviously due to the close proximity of a large and enthusiastic photographic fraternity to the land of the great photographic chemists. The interest which English workers have shown in the development of color-photography has culminated in the formation of an organization known as The Society of Color-Photographers, which is already distinguishing itself by its enthusiastic activity in various ways, especially by the brilliant success of its first annual exhibition, recently held in London. Eminent English pictorialists have vied with each other in demonstrating to their respective admirers the chromatic possibilities of the year's sensation. Thus some highly creditable successes have been scored in the interests of photography in colors, which have been chronicled with all the scintillating rhetoric of which our English cotemporaries are capable. All the while a group of American Photo-Secessionists — Stieglitz, Steichen and Eugene — gifted with an ardor equaled only by their sagacity, were in Paris, quietly experimenting with Lumière plates. The results of these trials were exhibited, recently, to members of the press in the Little Galleries, where they elicited expressions of delight from professional critics and photographers, alike, including Pirie MacDonald, whose glowing tribute was printed in the November PHOTO-ERA. Even M. Antoine Lumière, who was in New York recently, on business connected with his firm, was agreeably surprised, and is said to have pronounced the results on view superior to those produced in the factory at Lyons. It is almost needless to say that success with Autochrome plates is assured only to photographers of uncommon technical skill. A perusal of the *modus operandi*, as fully described in the photographic press — *vide* also PHOTO-ERA for November — will attest the truth of this assertion. When ultimately these plates shall be available in the American market, they will be purchased with avidity by enthusiastic camerists, all along the line; but, unless the makers' directions are followed scrupulously, failure is certain. The new Warner-Powrie system of color-photography, a description of which appears in "The Crucible" of this issue, appears to be less complicated, and eliminates the reversal of the image, thereby greatly simplifying the process. The dominant feature of this new method, however, is that negatives in complementary colors are made direct by one exposure in the ordinary camera on one plate, as in the Lumière process, and that from these negatives an unrestricted number of positives in the true colors of nature may be printed on either glass or paper. This latter feature constitutes an advance in color-photography which is of the greatest importance.

As It Looks from a Distance

UNDER the above caption our esteemed cotemporary, *Camera Craft*, gives expression to a feeling of satisfaction warranted by the statement in *Photography*, of London, that, excepting *Camera Work*, *Camera Craft* is the most notable American photographic magazine. While felicitating Brother Clute on the distinction accorded him by Brother Bayley, we make bold to invite the attention of both gentlemen to the illuminating fact that a current European annual recognizes only two American monthlies; to wit, *Camera Work* and PHOTO-ERA. Congratulations are in order.

Unsafe Counselors

IT is generally admitted that the English photographic journals, individually and as a class, have much that is admirable. That some of them are bigoted to the point of inaccuracy has been pointed out by several observing American journals. But we are pained to find that at least two of our erudite English cotemporaries are guilty of occasionally imparting information that is far from being correct. Some of these statements, made editorially and in all seriousness, border on the ridiculous, showing that their authors are not well grounded in the knowledge accredited to them. It certainly is not too much to expect that the chief editor of an eminent English weekly, and pictorialist of high rank, shall be familiar with the working-principles of a lens and with dark-room operations.

Here one of these recognized authorities declares that one of the reasons for avoiding the use of a wide-angle lens is its *unequal illumination*; for, he further asserts, *not only does much less light reach the plate, towards its edges, but less of the little that does reach it can be used, in consequence of reflection*. This is, indeed, news to us, and, especially, to such distinguished opticians as Ross, Dallmeyer, Goerz, Voigtlaender, Zeiss and Darlot, whose wide-angle lenses, if intelligently employed, will not fail to distribute the light equally over the entire plate.

Another sapient editor advises that in developing a plate it is well to guard against air-bubbles, which can be dispersed *by running a finger — a clean one — over the whole surface of the plate!* We respectfully ask him how it is possible to ensure a finger being absolutely clean during dark-room operations? Did he ever hear of the use of a clean camel's-hair brush passed over the plate during the first stage of development? This safe and simple dodge has been practised in the United States during the past thirty years! A finger, indeed!

The Last Call

THE few remaining days of our annual print-competition will be lively ones for the belated contributors, as well as for us. Incidentally, it is suggested that haste, as well as carelessness in packing prints makes waste. To prevent damage in transit, prints should first be wrapped in soft paper, and then placed between pieces of corrugated board — the kind which is covered on both sides — larger than the prints and *with the corrugations running in opposite directions*.

THE ROUND ROBIN GUILD

Conducted by ELIZABETH FLINT WADE

A department especially designed for the amateur photographer and the beginner, in which information, advice and criticism will be freely given. Membership may be obtained by sending name and address to PHOTO-ERA, The Round Robin Guild, 383 Boylston Street, Boston, Mass.

"The mill-wheel 's frozen in the stream,
The church is decked with holly,
Mistletoe hangs from the kitchen beam,
To frighten away melancholy.
Icicles clink in the milkmaid's pail,
Youngsters skate on the pool below,
Sparrows perch on the garden rail,
And hark! how the cold winds blow!"

Winter has really come, and the once green and happy world is hidden away beneath the snow. Some there are who welcome winter, and some there are who shiver at its approach and long to flee away to a land where sunshine and song and flowers and birds make glad the time.

Why can we not all feel as did the little English boy of whom Oliver Wendell Holmes writes. It seems that this little boy carried tablets about with him on which, as occasion demanded or inspired, he recorded his thoughts and feelings. Dr. Holmes pauses long enough to regret that he did not have tablets to write on when he was a boy. He then continues the tale.

This little lad was also a cheerful lad, easily pleased and always satisfied with the present moment and its pleasures. In the spring, when he was sporting in the fields, everything seemed so delightful that he took the tablets from his pocket and wrote on them:

"Oh, that it were always Spring!"

When the glorious summer arrived with its joys it impressed him as too beautiful to change, so he wrote:

"Oh, that it were always Summer!"

The autumn took quite as strong a hold on his mind, and he wished that this season might always continue; and then when the winter came, with frosts and snow and ice, it was to him so intensely enjoyable that, forgetting the three seasons which in turn gave him joy, he pulled out his tablets for the fourth time and wrote on them:

"Oh, that it were always Winter!"

Holmes said that he got a healthy optimism out of that story which lasted him all his life. So let us, too, profit by the story and be glad for each season in its turn; and for all that befalls, let us with a cheerful mind make the best of it.

We do not feel that winter is really here until after the Christmas holidays have past — the holidays for which young and old are preparing gifts for those they love, besides extending the Christmas giving beyond these contracted borders and remembering those whom fate and fortune have used roughly.

The Guild plans to give each year hints and suggestions to its workers as to the use of pictures in making these friendly remembrances.

In making these suggestions for Christmas gifts, the editor is fully aware of the fact that Christmas is only a little more than three weeks away, but the Guild members, while in a class by themselves, possess many of the attributes of the ordinary mortal. It is, therefore, safe to say that many of them are at this very moment halting between not only two but half a dozen opinions as to what will be appropriate gifts for certain friends.

The camera solves many problems, answers many vexed questions, and it can answer well and quickly the annual Christmas query, "What can I give to — that will be liked and enjoyed?"

The answers to this question at this hour will be suggestions for articles that can be made quickly and easily. Some of the work can be done in the evening; some will require a day of sunshine. Amateurs at this time of year take for their motto the proverb "Make hay while the sun shines," substituting the word *pictures* for hay, and devote the sunny day, which comes only semi-occasionally at this time of year, to the making of prints.

All the work of finishing the gifts here described may be done in the evening, a day or two of sunshine being all that is necessary for quite a bit of printing — enough, in fact, to make a number of gifts.

MINIATURES

A WELL-PAINTED miniature is a real pleasure to behold, but the poorly-painted ones — and their number is daily and hourly on the increase — should be levitated off the face of the earth. A good photograph is not only more satisfactory, but far more artistic.

Miniatures of children are specially attractive and, if one has a fine negative of a child's head, a print made from it on celluloid and toned a warm sepia will, when properly mounted, have the appearance of a monochrome done on old ivory. It is to be set in a miniature-frame which is fitted with an imported convex glass. This gives a softness and brilliancy to the picture unattainable by any other means. The baby's picture printed in this way and set in this sort of frame would be a charming gift for the doting parents and grandparents.

A paper print will be almost transformed in appearance and finish by mounting in this way behind the convex glass, and while not as pleasing in color as the sepia on the celluloid, if one cannot compass this process the paper print will be very satisfactory.

FIRST
PRIZE
WATERSCAPES



D. H. BROOKINS

FROM THE BRIDGE AT TWILIGHT

A "JAPANESEY" LANTERN

GIVEN four empty 5 x 8 plate-boxes, a few sheets of Japanese tissue-paper, a bottle of plain silver sensitizing-solution, a few sketchy negatives and a roll of passe-partout binding, what would you make of them?

An ingenious and skilful amateur evolved out of such materials as pretty and decorative a lantern as one would find on a day's journey.

The way he did it was this.

First, he sensitized the Japanese tissue-paper with the silver solution made after the formula given in a recent number of *PHOTO-ERA*.

Second, he selected four 5 x 8 negatives of the kind which suggest form in the objects pictured

rather than give detail. These pictures were landscapes — figures not being exactly suited to the effect he had in mind — and, of course, the pictures were panels taken the long way of the plate. He made the prints somewhat deeper than if they were to be mounted, as they were to have the effect of transparencies.

Third, he marked an opening in each box, leaving just enough of the pasteboard to make a three-quarter-inch frame all around. The lines were gauged with a square so as to be exact in width, the pasteboard cut through with a very sharp knife and all roughness of the edges smoothed away with a bit of emery-paper. These were the panels of the lanterns, the frames into which were to be set the pictures.

SECOND
PRIZE
WATERSCAPES



HELEN G. CLOGSTON AFTERNOON ON LAKE CHAUTAUQUA

Fourth, he bound all the edges of the opening with a dull olive-green passe-partout binding, letting the binding come close to the outside edge of the box and even with it, and just turning over a narrow edge and sticking it to the inside of the box.

Fifth, he mounted his pictures in the opening of the boxes. The four panels were then ready for the completion of the lantern.

Sixth, he cut strips of the passe-partout binding the length of the boxes. Two of the box-covers were taken and the edges set together at right angles. These edges were then joined together on both sides with strips of the binding; the third panel was then attached, and finally the fourth, making a square lantern with small angles at each corner where the boxes came together. A piece of corrugated board, the kind that has the corrugation enclosed between smooth papers, was punctured with holes and fitted into the lantern for a bottom to hold the candlestick, which was a small brass one known as a soldier's or camp candlestick. Olive-green crêpe-paper

was cut in strips two and one-half inches wide, pulled out at the edges to make a "fluffy ruffle," a little paste was applied along the angle where the boxes joined, the strips of crêpe-paper (previously creased in the center so that they would go on evenly) were stuck into the pasted edges the bottom of the lantern covered with a square of the paper, the strips brought together at the bottom, fastened with a little paste and the ends left to hang free at a length of five or six inches.

Green flower-wire was decorated with Japanese cherry-blossoms and used for cords by which to hang the lantern—a lantern like this which has been in use for two years is just as attractive as it was the day it was made.

The plate-boxes stay the lantern so that it does not warp or lose its shape, as would be the case if it was made—as of course it could be—with four pasteboard panels.

One could vary this lantern in many ways. There is the ever-ready blue-print. This paper, not printed as deep as for mounting as pictures,

would serve admirably for a blue lantern for a room where its color would harmonize with the decorations. The Japanese tissue could have tinted tissue-paper backing, and if the print was a sunset view a delicate pink paper would give a hint of rose in the sky. For a water-scene a Nile-green paper would suggest the real color of water, etc., etc.

In making a lantern like this described, one must remember that he is aiming at decorative effect, not at the picture for the picture's sake, but only as it lends itself to the idea to be worked out in the object in hand.

PICTURE POSTCARDS

THE fondness for the picture postcard is on the increase instead of on the wane, and nearly every town, if it has not more than a dozen buildings, has its town picture postcard made by some enterprising amateur who thus turns an honest penny while supplying the popular demand.

Why not make use of this universal fad and thereby turn out an original and appropriate Christmas gift. First make a negative of either the house, or, better still, the room of the person to whom you desire to make a gift, print the picture on twenty-five postals, do them up in a real Christmas packet and drop them into Santa Claus' pack in time to be delivered on Christmas Day.

One may buy the cards ready sensitized or, better still, may buy the postals and sensitize them himself. If the cards are not the government postals, but require the addition of a stamp, then do not forget the stamp on each, so that they are all ready to send as far as postage is concerned.

In printing the picture on the card do not use up all the surface. It will be far more dainty if only a portion of the card is used. If it is the house itself print it at the top of the card so that the lines run the short way of the postal.

A more ambitious present is the sensitizing of a packet of writing-paper and printing the picture at the top of each sheet. This would be an especially pretty gift.

Get a good quality of paper and use the formula for silver-prints or for blue-prints. Sensitize a strip across the top of the paper and protect all the sensitized surface from the light except that which is to receive the picture. The whole sheet may be immersed in the toning and fixing-solution without injury to the paper, the only precaution being that the sheets must be dried flat and when dry put under pressure to smooth and straighten.

In the October number of PHOTO-ERA, in "The Crucible," will be found a formula for sensitizing postcards which when finished have a pleasing brown tone. It might be well to try this formula, as the after-process simply requires washing the card in a few changes of water, then immersing in a weak solution of hydrochloric acid, and then a final washing.

A NOVEL BLUE-PRINT

THIS Christmas suggestion is for the Guild members of the gentler sex, though there is no reason why the blue-print itself might not be made by even a very advanced worker in photography.

A square of bolting-cloth large enough for a sofa pillow was sensitized with blue-print solution. The cloth when dry was stretched on a flat board, held in place by thumb-tacks, and on it was arranged a design in leaves, using the natural leaves. A sheet of glass was laid over it and the whole placed in the sunlight till the cloth began to bronze. The glass and leaves were then removed, the fabric washed in running water, then stretched and dried. The result was white silhouettes of leaves on a delicate blue background. The cloth was made up over a pale rose color, and the effect was not only novel but very pretty as well.

This idea might be carried out in a less ambitious way by using squares large enough for pin-cushions instead of attempting so large a piece of work as a sofa pillow. The leaf designs are very effective, but the printing of landscapes for figures on fabrics to be used for decorative or any other purpose is a perversion of photography against which every good amateur should set his face and have none of it.

A PORTFOLIO OF PRINTS

ONE of last year's gifts which has given great delight to the recipient was a portfolio of prints made by an amateur who had a great fondness for historical scenes, buildings, relics, etc. The person to whom the gift was given had such a great surplus of this world's goods that it was very hard to find anything of which she did not possess a duplicate, and in most cases of much greater worth than the donor could afford. Remembering, therefore, her penchant, too, for historic things, the amateur selected such of his negatives as recorded historic scenes and made from them some fine prints, using in most cases heavy platinum paper with either smooth or rough surface, as the qualities of the negatives demanded. They were all in black-and-white. Then he obtained some heavy paper the color just off from white, and some sheets of Japanese tissue-paper and had them cut in size 11 x 14.

The pictures were carefully trimmed, then a very light quality of medium shade gray paper was obtained and as many pieces cut from it as there were prints, the gray paper being cut half an inch larger all round than the print for which it was designed.

These gray squares were mounted on the heavy white paper at the proper position chosen for the picture, the sheet of Japanese tissue was then laid over the heavy paper, and held in place at each corner by the small disks gummed on both sides which come for such purposes. The print was then mounted on the Japanese tissue itself, and the gray paper visible through the translucent tissue gave just a band of soft, inde-

finable gray around the print, which made a very artistic finish.

The title of the picture was lettered in the lower left-hand corner with a small drawing-pen. On the back of the mounting was written a short description of the picture, with such historical facts briefly stated as would give one quite a bit of national lore.

A "LULLABY" BOOKLET

THIS dainty Christmas gift already completed is for the mother of the "dearest baby in the world." The amateur who made it began it some months ago, but a description of it may give a suggestion for a less ambitious gift along the same lines.

Eugene Field's charming "Lullabies" were chosen and sheets of parchment paper 8 x 10 in size were selected, made into a booklet, and these dear lullabies lettered on them in ink, for the amateur was as clever with pen as with camera.

Appropriate photographs had been made to fit each lullaby, and were mounted in the spaces left blank for this purpose. The book had a red ooze-leather cover, and was tied with green ribbons, and was a most Christmasy looking book.

Now if one has a friend — and who has not — in whose home is a dear, dear baby, then one of these lullabies could be thus utilized, and made into a very artistic and unusual gift.

Take the "Norse Lullaby," for instance. There are three stanzas, and each stanza suggests a picture — the first two a winter picture, and the last one a picture of a mother rocking a baby to sleep. In following out this suggestion, letter each verse on a separate sheet of paper, mount the pictures also on separate sheets, alternating a picture with a stanza. If one wished to make the pictures especially attractive they could be printed on an 8 x 10 sheet of paper and thus do away with the mounting entirely, the print taking the place of a leaf of the book. In case one does this the paper chosen should be either the heavy rough or the heavy smooth. If the pictures are done in sepia — though for winter scenes the black-and-white is more appropriate — then have the lettering done in sepia.

With the pictures, title-page, etc., one would have a booklet of ten or a dozen leaves.

Every amateur undoubtedly has negatives in his collection suitable for the illustrations for the Norse Lullaby, and even if he has not he can make them, for it is winter pictures that are needed for two of them, and one can always find a mother and babe ready to pose for the third picture.

AWARDS — WATERSCAPES

First prize: D. H. Brookins.

Second prize: Helen W. Clogston.

Third prize: Dr. W. F. Zierath.

Honorable Mention: R. E. Weeks, F. E. Bronson, C. W. Christiansen, J. H. Field, Grace E. Mounts, Jessie B. Dixon, Clare J. Crary, Charlotte M. Birch, Clarence G. Brooks, J. A. Murdoch, R. A. Buchanan, Gust Horlin.

Monthly Competitions

Closing the last day of every month.

Address all prints for competition to PHOTO-ERA. The Round Robin Guild Competition, 383 Boylston Street, Boston, Mass.

PRIZES

First prize: Value \$10.00.

Second prize: Value \$3.00.

Third prize: Value \$2.50.

Honorable Mention: In addition to the awards, the names of those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be published.

Prizes may be chosen by the winner, and will be awarded in books, magazines, enlargements, mounts, photographic materials or any article of a photographic or art nature which can be bought for the amount of the prize won.

RULES

1. These competitions are free and open to all photographers, whether or not subscribers to PHOTO-ERA.

2. As many prints as desired, in any medium, mounted or unmounted, may be entered, but they must represent the unaided work of the competitor.

3. The right is reserved to withhold from the competitions all prints not up to the PHOTO-ERA standard.

4. *A package of prints will not be considered eligible unless accompanied by return postage at the rate of one cent for each two ounces or fraction.*

5. *Each print entered must bear the maker's name, address, Guild number, the title of the picture and the name of the competition for which it is intended, and should be accompanied by a letter, sent separately, giving full particulars of date, light, plate or film, stop, exposure, developer and printing-process.*

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA. If suitable, they will be reproduced, full credit in each case being given to the maker.

SUBJECTS FOR COMPETITION

November — "Genre Studies." Closes December 31.

December — "Home Portraiture." Closes January 31.

January — "Illustrated Poem." Closes February 29.

February — "Mountains." Closes March 31.

March — "Atmospheric Effects." Closes April 30.

April — "Decorative Photography." Closes May 31.

May — "Animals." Closes June 30.

June — "Pinhole Pictures." Closes July 31.

July — "Harbor Scenes." Closes August 31.

August — "Flowers." Closes September 30.

A DEVELOPER FOR GASLIGHT PAPERS

BLACK markings are a frequent trouble met with in developing all kinds of gaslight prints. A developer which completely prevents these characteristic defects has been suggested by M. Quentin. Although the whites are made an intense yellow, this color entirely disappears in the fixing-bath. The formula is as follows:

Metol	10 grains
Hydroquinone	50 "
Sodium sulphite	280 "
Sodium carbonate anhy-	
drous	350 "
Potassium iodide	30 "
Potassium bromide	8 "
Distilled water.....	10 ounces

FINGER-MARKS ON NEGATIVES

THESE are due to carelessness in handling, and need not occur if a little caution is exercised. They can usually be removed by drawing a piece of chamois-skin tightly over the finger, moistening it in benzine and rubbing it back and forth rapidly over the marks, using slight pressure.

Answers to Correspondents

Readers wishing information upon any point in connection with their photographic work are invited to make use of this department. Address all inquiries to ELIZABETH FLINT WADE, 321 Hudson Street, Buffalo, N. Y. If a personal reply is desired, a self-addressed, stamped envelope must be enclosed.

MRS. H. E. C.—Your print entitled "Memories" has much artistic merit, the subject is carefully posed without being too much posed, and the technical finish is excellent. The criticism of the picture would be that the name did not fit the picture. The picture is very interesting, showing, as it does, a view of one of the oldest houses in Massachusetts, and is one which we should like to add to the Historical Picture collection.

ELEANOR S.D.—It would seem that you have been poisoned by the bichromate of potash. This chemical should be handled very carefully either in the crystals or in solution. The powder from the crystals is extremely irritating to the tissues of the nose, while the solution poisons the hands if it comes in contact with a slight wound or abrasion. You should consult your physician at once and have him compound a healing-salve for the sore. [Such queries as the foregoing are answered at once by mail, but are also inserted in the column for the benefit of other members.—ED.]

SAMUEL L.—You can restore your box of plates which have been accidentally light-struck, by the following method. Make up a solution of thirty grains of chromic acid, sixty grains of bromide of potassium, and ten ounces of water. Soak the plates in this solution for fifteen minutes,

wash or rinse well, then dry in a place free from dust. Of course this process must all be conducted in the dark-room. The plates lose something of their sensitiveness, and the exposure should be doubled; that is, twice as long as for similar plates which have not been injured. Why not remove the silver from the plates and sensitize them for blue transparencies or for black tones by the kallotype process? You would be much pleased with the result should you decide to do so.

DELIA BRANDER.—A weak solution of hydrochloric acid and alum will remove the pyro stain from the negative. Use a salt solution for stop-bath for your solio prints and they will be a much better color. The print goes on toning sometimes after it is removed from the toning-bath, but if dropped into a salt bath the toning will be arrested at the point it was when taken from the toning-solution.

A. H. R.—You do not need a special camera in making enlargements. The article published in January, 1907, number to which you refer will give you all the directions in detail.

H. A. C.—See answer to A. H. R. as to number in which the article on enlarging was published.

F. E. D.—Sodium thiosulphate is what is known commercially as hyposulphite of soda. Sodium thiosulphate is the correct name, but is seldom given, as hyposulphite of soda, often shortened to "hypo," is the name by which it is universally known. The fact is that few dealers would know what chemical you wished for if you should ask for sodium thiosulphate.

KATE R. L.—You can hasten the drying of a plate by soaking it for a short time in alcohol. The alcohol displaces the water in the film, the evaporation of the alcohol takes place rapidly and the film therefore dries quickly. A much quicker process is the soaking the plate, for a few moments in a strong solution of formaldehyde — an eight or ten per cent solution — then subjecting the plate to heat. The formaldehyde hardens the film, making it impervious to heat.

FRANCES D. C.—Local reduction may be accomplished by means of a piece of clean chamois and alcohol. Stretch the chamois over the end of the forefinger, dip it in alcohol and rub the dense portion which it is desired to reduce. The rubbing should be done gently and the chamois replaced by a clean spot when it becomes blackened with the silver. It is wiser to make two sittings at this process. If continued too long the film becomes very soft and suddenly tears or rubs through the glass, whereas if a certain amount of the deposit is removed, then the film is allowed to dry and the process repeated, the result is eminently satisfactory.

GRANT SULLY.—A formula for a simple transfer-varnish is made by dissolving one-half ounce of gum mastic in four ounces of alcohol, and, when thoroughly dissolved, adding one dram of poppy-seed oil. This varnish would answer every purpose for which you wish to use a transfer-varnish.

THE CRUCIBLE

A MONTHLY DIGEST OF FACTS FOR PRACTICAL WORKERS

Conducted by PHIL M. RILEY

Readers are encouraged to contribute their favorite methods for publication in this department
Address all such communications to Phil M. Riley, 383 Boylston Street, Boston, Mass.

COLOR-PHOTOGRAPHY NEAR

A NEW ONE-PLATE PROCESS FOR THE ORDINARY CAMERA

So much space has been devoted by the press of late to the Lumière Autochrome process of color-photography that those who have not watched the progress made in this line of work during the past year are apt to associate one-plate processes exclusively with it. Screen-plate color-photography, in which the light-filters are distributed in the plate itself, has at last developed from the experimental stage into the region of practical usage, and there will soon be placed upon the market a new plate of this sort, which is a further development of the well-known Joly linear method, but which embodies advances and advantages of the greatest importance.

It will be remembered that Professor Joly of Dublin placed a sheet of glass ruled with fine transparent lines of red, blue and green against the surface of a panchromatic plate and made the exposure through it. The colored lines acted as light-filters, each line practically transmitting only its own color, so that the resulting negative consisted more or less of bright and dark lines. He then made a transparency from this negative, which, when bound in contact and proper register with a ruled screen similar to that used when making the exposure, reproduced the colors of the subject photographed. The colored image was, of course, due to the fact that the colored lines of the screen were visible through the clear lines of the transparency, but covered by the opaque lines. This process was almost simultaneously worked out by MacDonough in America, but was not successful in either case. First of all, the ruled lines were not fine enough and the image was not homogeneous; in other words, the lines were visible to the eye and had an irritating effect. Then, too, it was found difficult to secure uniform contact between the ruled screen and sensitive plate, and, finally, the ruled screens were expensive to manufacture.

To John H. Powrie and Miss Florence Warner of New York has come the satisfaction of being able to perfect the Joly process and successfully combine the color-screen with the sensitive emulsion by a method which ensures manufacturing the plates at a reasonable cost. There are many advantages permitted by the linear form of screen-plate which are not possessed by irregular grain color-screens, and these, together with other important developments of the process, which will be described later, greatly increase the possibilities of one-plate color-photography and make this process a serious rival of

its predecessors. The story of Miss Warner's association with Mr. Powrie throughout his experiments, her assistance in the laboratory work, her financial aid, and, above all, her untiring interest in the process and faith in its ultimate success form an interesting story for which, however, there is no space here. Suffice it to say that they have together worked out an exceedingly practical and simple process possessing advantages which are almost overwhelming. A linear color-screen is combined with the sensitive emulsion so that but one plate is required, to be used in an ordinary plate-holder and exposed but once in an ordinary camera. This plate, it should be noted, is more rapid than other screen-plates, because of the greater transparency of the light-filters and the fact that there are no interstices to be filled by an opaque deposit. The color-screen, being of linear and very regular form, has enabled Mr. Powrie to devise a method of printing as many positives from a color-negative, or vice versa, as may be desired. This feature is of immense importance and marks the chief advantage of this sort of plate over irregular grain screen-plates. The ingeniousness of Mr. Powrie's methods also makes it possible to produce, without any attempt at registration whatever, a set of full-tone negatives, in which the linear ruling is absent, representing the three separate colors in the subject. These may be employed in making paper prints by the pinatype or other processes, or for making half-tone plates for three-color press-printing.

The basis of the process is a combination of the sensitive emulsion and linear light-filters, which form a color-screen. This is known as the Florence Heliochromatic Screen-Plate. The color-screen is placed between the glass and the sensitive emulsion as in the Lumière process, but consists of fine transparent, colored lines of red, green and blue, which, with the plates now in use, are from $\frac{1}{160}$ to $\frac{1}{120}$ of an inch in width. Joly and MacDonough failed in point of uniformity beyond $\frac{1}{36}$ of an inch, and therefore the method of producing lines of such extreme fineness constitutes the most important advance step of the Warner-Powrie process.

In making the color-screen a plate of ordinary glass is coated with bichromated gelatine or other suitable colloid. This, when dry, is exposed to the light and printed through a specially prepared Levy screen or grating ruled with opaque, parallel lines, which are double the width of the transparent spaces between them. These spaces are the exact width of the red and green lines in the finished screen. Light passing through the transparent lines of the grating ren-

ders the gelatine beneath insoluble in warm water, while the portions protected by the opaque lines wash away, leaving upon the glass transparent gelatine lines in relief with depressions of bare glass between. The plate is then placed in a solution of a suitable dye, which penetrates the colloid lines and colors them green. Immersion in a bath of alum or tannic acid fixes the color so that the plate may be washed and again coated with the bichromated gelatine as before. It is then ready for printing once more under the same grating, but shifted — by means of the micrometer-screw of the carrier in which it rests — so that the green lines just secured are protected by the double width of the opaque lines of the grating, as is a portion of each of the remaining unexposed spaces between the uncovered lines and those just stained green. The plate is treated the same after this exposure as for the green lines, except that a red dye is used. At this stage the screen, when viewed by transmitted light, appears yellow as a result of the mixture of red and green.

After treating the plate again the same as for the first two colors, and coating it once more with the gelatine, the remaining spaces are filled with blue. For this last printing it is unnecessary to have the plate registered under the grating, as it may be exposed through the back. The lines of red and green act as a negative and protect the colloid under them from becoming insoluble, so that the light reaches the sensitive gelatine through all portions of the screen not occupied by green and red lines, and the dye, after development in warm water as before, colors them blue.

In this way a continuous series of colors is secured over the entire screen without white interspaces or overlapping of two lines of different color. Under a microscope the plate shows a series of fine red, blue and green lines, the blue lines having been purposely made narrower than the red and green, because blue is the color which appears most intense in the screen, and it is, therefore, an advantage to have it less visible. To the naked eye the fineness of these lines renders them invisible, and by transmitted light the plate appears gray in color. After being coated with a suitable varnish, a panchromatic, sensitive emulsion is applied in the usual way. Such is the Florence Heliochromatic Screen-Plate as it is prepared ready for the production, at one exposure in an ordinary camera, of a negative in the complementary colors of nature, or, by reversal, a positive transparency in colors.

The reversal method of securing positives, which involves a number of chemical reactions, is, however, roundabout, unnecessary and not to be advised. Aside from the numerous operations required, satisfactory reversal demands an extremely thin coating of the sensitive emulsion resulting in a plate of but little latitude, a short range of gradation, and necessitating very accurately-judged exposures. Here we find one of the chief advantages of the Warner-Powrie system, in that one color-plate, either negative or

positive, may be printed from another just as a negative may be printed from a positive transparency, or vice versa, and by the ordinary procedures of exposure, development and fixation which every photographer understands. More than this, the sensitive emulsion can be of the usual character, and the certainty of obtaining satisfactory results increases with the greater latitude of the plate.

It is readily seen that these plates must be exposed through the glass so that the light will pass through the color-screen before reaching the sensitive emulsion. Negatives thus secured are in complementary rather than true colors; viz., red appears green, green appears purple, yellow appears violet and violet appears yellow. This is easily explained in a simple way by the fact that each line in the color-screen transmits practically only its own color. The reflected light from a red rose, for instance, passes through the red lines, but is absorbed by both the green and blue. After development and fixation a deposit of silver will be found under the red lines, thus stopping them out and leaving the green and blue lines transparent over the area representing the rose, giving it a bluish-green color.

All this has to do with the factory method of manufacturing the plates and does not concern the photographer except in so far as he is interested in the theory of the process. The manipulation of the plates, as they will eventually be placed in the hands of the consumer, is as simple as for any panchromatic plates and presents no more difficulty than is involved in making an ordinary negative and a transparency from it.

Having secured a negative in complementary colors by the usual methods of development and fixation, printing may be considered. First, let us suppose that three full-tone negatives are desired for half-tone work or printing by the pinatype process. The color-negative is placed in a printing-frame glass side toward the light, which passes through a filter allowing only one of the three colors, red, green and blue, to reach the negative beneath. In contact with the film side of the negative is placed a sheet of glass or celluloid or hollow metal frame, the thickness of which bears a definite relation to the distance between the printing-frame and the light — which may be daylight, electric light or gaslight — as well as the angle through which the frame is turned during exposure. Against this glass is placed an ordinary sensitive plate. One-third of the total exposure is given with the frame at right angles to the direction of the light, one-third with the frame turned slightly toward the light and one-third with the frame turned away from the light to the same degree. If the proper adjustment is maintained between the light-distance, thickness of glass and angle of inclination, the set of lines composing one-third of the color-screen is printed at the first exposure, it is duplicated at one side of the lines first printed at the second exposure and again on the other side of the first set of lines at the third exposure. In this way a full-tone positive is secured, representing, for instance,

the red sensation. From this a negative may be made by the ordinary procedure known to every photographer. Similar series of exposures under suitable filters will produce positives for the green and blue sensations from which negatives may be readily made. Of course a certain amount of aberration is of necessity bound to occur, but the lines are so fine that the variation is trifling and need not be seriously considered in practical work.

Printing positive color-transparencies direct from color-negatives is of still greater interest to the average worker and is accomplished in the same manner described for making full-tone positives, except that only one panchromatic screen-plate is used, with its lines crossing those of the color-negative. Three exposures are given as before, thus duplicating each line on both sides of the first. In this way the color-positive shows the ruling of the second plate only, without the introduction of black or white to degrade or dilute the colors, as occurs when printing from a positive or negative in the usual way. Mr. Powrie deserves great credit for this clever but simple solution of a difficult problem.

Several other methods are available for securing triplication of the negative images, principal among them being the use of two mirrors, to multiply the light-sources, fixed to opposite sides of the printing-frame at such a distance and angle (about 110 degrees) that the same effect is produced by one exposure as is obtained by shifting the angle of the printing-frame. This method has been successfully employed in printing a color-negative on bleach-out paper such as Uto. Ordinarily only those portions of the paper under the red lines, for instance, become red. The adjoining lines of blue and green under the red object are opaque and remain black, so that only one-third of the image is red while two-thirds is black. By triplication of the lines with mirrors, as described, this defect is done away with and more brilliant prints result. Light from three sources will also produce the same triplicating effect as the mirrors if the printing-frame is placed at the proper distance.

The claims of its promoters for the Warner-Powrie process might be questioned but for the fact that they are substantiated by results. England has had a better opportunity to view these than America, because both Miss Warner and Mr. Powrie are now in London attending the first annual exhibition of the Society of Color Photographers, the only organization of its kind in the world. Undoubtedly the chief interest in this exhibition is centered in the examples of color-work which they are showing. Mr. E. J. Wall, perhaps the best authority in England, has examined all of the exhibits very carefully, including these, and states that in his opinion the transparencies by this process are more brilliant—that is, more transparent—than any others by screen-plate methods. Mr. Wall also says, "I think it the first really practical process of color-photography, applicable to all subjects by the man in the street, the hand-camera worker

and the professional photographer. It is as great an advance on the starch-grain or other irregular-grain processes as these were over the ordinary three-negative processes, because one can obviously print on any surface. It promises one practically a matrix from which reproductions can be made, and if the plates are put on the market at anything like reasonable prices it is the process of the future." No less enthusiastic are men like Dr. C. E. Kenneth Mees, A. J. Newton, William Gamble and J. H. Pledge, all prominently identified with color-photography in England.—*Phil M. Riley, in Boston Transcript, October 23, 1907.*

BETTER COLOR-RENDERING IN THE WARNER-POWRIE PROCESS

A SIGNIFICANT point in connection with the plates for this method of color-photography is that the color-screen of the plates used for making both negative and positive transparencies is the same. America has not yet had the opportunity which England has enjoyed to judge of the accuracy of color-rendering by this process, although British authorities pronounce it excellent, which means much. Should there be any slight inaccuracies, however, they could probably be rectified by the application of a well-known optical principle. It is generally conceded that all of the spectrum colors must act to produce the negative, while but three pure colors should be used for viewing the finished positive. Mr. Herbert E. Ives, the well-known color-expert, agrees with PHOTO-ERA that two plates having different color-screens might be employed to advantage: one, carrying all of the spectrum colors, for making the negative; and another, carrying only three pure colors, for making the positive.

TRIMMING PRINTS

IN most cases judicious trimming will greatly enhance the artistic value of a picture. A half-inch or more from the foreground, or perhaps from the top of the picture, as the case may be, would emphasize the perspective, which is entirely lost, owing either to the wide expanse of sky or the stretch of foreground.

In looking at a picture the eye involuntarily seeks out the high-lights. In some of the landscape pictures one sees, a strong high-light appears near the edge of the picture, which obtrudes itself on the vision though it was not centered on the principal object, nor did it have to do with the merit of the picture. It was simply an ugly blotch on what would otherwise have been a fairly good picture. When this objectionable spot is trimmed away the improvement in the picture is at once apparent.

One of the points to which amateurs should pay special attention is the confining of the high-lights to a much circumscribed limit. There may be many gradations of light and shade in a picture, but great care should be taken neither to have the high-lights too intense nor to have them scattered.

An art maxim which has been often repeated is that the center of a picture is its weakest point.

This axiom is often overlooked, for in a number of landscapes received recently from different amateurs the object of greatest interest was in the center of the picture, while in some of the figure-studies the figure had been posed in the very center of the plate. In each one of these pictures the necessary pruning obviated at once this most glaring fault.

STRIPPING FILMS FROM PLATES

ONE of the easiest methods of stripping films to be placed upon new glasses, whether the original glass has defects which will show in printing or has been accidentally cracked, is to immerse the plate in the following bath:

Sodium fluoride.....	30 grains
Sulphuric acid	$\frac{1}{2}$ fluid dram
Water	10 ounces

The film will soon float off, and may be considerably enlarged, if this is desirable, by standing in clear water for several minutes.

THE SKY IN SNOW-SCENES

THE pictorial photographer has constantly to contend with a number of difficulties due to inherent tendencies of the dry-plate, among which may be mentioned the loss of tone-value in the sky of snow-pictures, which is almost invariably too light. In nature the sky in such a scene is distinctly darker than the high-lights of the snow, but we see very few photographs in which these values have not been reversed. As a result the proper balance between the sky and the high-lights is destroyed, and the tone-quality of the picture is at fault. The reflected light from even a very dull sky seems to affect the plate more than that emanating from the snow itself, and this defect is likely to occur in every instance unless carefully guarded against.

In snow-scenes we have a very long range of gradation, the subtle distinctions even in the high-lights being desired, as well as detail in the dark objects usually found in the foreground. Over-exposure is fatal to the finer gradations; under-exposure, to the detail. It might seem that as color is almost entirely absent from such views, an orthochromatic plate and color-screen is not necessary; but their tendency to give negatives having a good printing-value in the sky is worthy of consideration. With such a plate and screen, ample exposure and full development will do most to ensure truthful values.

EXPOSURE WITH COLOR-SCREENS

ONE frequently wishes to test a color-screen in order to ascertain what increase of exposure — above that necessary with the ordinary lens alone — is required when it is used. This can be easily done by selecting an average landscape and photographing it in such a way as to give a graduated test-negative. The screen used is not likely to be less than a four-times screen, nor should it be more than twelve times. We shall not, therefore, consider a greater range in this test, for deeper screens produce unnatural and unpleasing results and are not advisable. In fact, the writer believes that usually a four or

six times screen is ample, and that the occasions are rare, indeed, when one deeper than eight times is called for.

Our range being from four to twelve, we may conveniently devote one inch of the width of a 4 x 5 plate to the ratios 4, 6, 8, 10, 12. By pencil-rulings on the slide of the plate-holder we can easily arrange to successively expose the inch-sections of the plate. Having determined the correct exposure without the screen, which is, we will say, one-half second, we remove the slide from the plate-holder and expose for four times that, or two seconds. Now push in the slide to the first ruling and expose one second; then to the second ruling and expose one second, and so on until each remaining section has received one second exposure. The result is a graduated series of exposures ranging from four to twelve times the exposure required when the screen is not used. Normal development will quickly show which of the exposures has been correct and, consequently, which of the ratios is to be adopted in future work with this particular screen.

DEVELOPING ENLARGEMENTS WHILE PRINTING

It is quite possible to develop a bromide print while the image is impressing itself upon the paper, saving considerable time thereby. The easel used should be so arranged that a long, narrow tray may be placed underneath to contain the developer and catch the drippings from the print. After securing the focus on a sheet of white paper, the sensitive bromide paper should be moistened in water and then pinned in proper position on the easel. Exposure should be made preferably by artificial light, as, being a little longer, it gives more latitude in manipulation. The developer should immediately be mopped evenly and rapidly over the print with a large tuft of absorbent cotton. This, it will be found, can be done without obstructing the light-action to any appreciable extent. The print must be fixed and washed in the usual way.

GLASS POSITIVES BY THE KALLITYPE PROCESS

UNSATISFACTORY negatives or light-struck plates, which sooner or later find their way to the photographer's waste-basket, can easily be put to the far better use of making glass positives. First of all, the silver must be entirely removed so that only the transparent gelatine-coating remains on the glass. This can be accomplished with Farmer's reducer, prepared by adding enough red prussiate of potash to a plain hypo fixing-bath to color it a strong yellow. Then wash the plate thoroughly, dry and place for about two minutes in a kallotype sensitizing-solution. It is now ready for printing, which should be slightly longer than for paper, but developing, clearing and fixing are conducted the same as for paper prints. Complete formulæ for the kallotype process and directions for working it will be found in the PHOTO-ERA either for May, 1906, October, 1906 or April, 1907.

PHOTOGRAPHY IN MID-AIR

THAT photography can be of the greatest possible service in military operations has been demonstrated by the success of Herr Marie's projectile, which, it is claimed, has secured photographs at varying heights up to half a mile. The camera is constructed in the form of a conical shell and is thrown, by a sort of trap, into the air, from whence it turns at a predetermined angle and points downward slightly as it begins to descend; the shutter is then automatically released and the picture is taken of a wide expanse of country. It is remarkable with what accuracy the flight, and spot at which the camera will fall, can be calculated when there is little or no wind. Precautions have, of course, been taken to avoid damage by concussion when the camera falls to the ground.

TITLING NEGATIVES

ALTHOUGH there exist several methods of transferring printing or writing to negatives, none is simpler of execution than the following: Upon a piece of good, coated paper write or draw whatever inscription is to appear on the negative, using a clean pen dipped in a solution of red prussiate of potash (potassium ferricyanide). Next dampen lightly but evenly with cold water that portion of the film-side of the negative intended to receive the lettering, and upon the moistened space evenly but briefly press down the paper bearing the inscription. After carefully removing the paper, the inscription will be found, reversed, on the film-side of the negative. Now if a solution of sodium hyposulphite be applied to the space thus treated, or, better still, the entire negative be immersed in a fixing-bath, the inscription will almost immediately turn white. The negative, of course, must now be thoroughly rinsed. Whoever has a set of rubber type can make an impression on a piece of coated paper and then proceed as directed. In this case it is obviously necessary to saturate a piece of white blotting-paper in the above-mentioned ferricyanide solution, and upon this press repeatedly, thus moistening the rubber stamp. The type itself suffers no harm if immediately after use it is pressed several times upon a sheet of blotting-paper moistened with water, thus freeing it of any traces of the salt. Following the directions, given above, one is sure to obtain perfect, clear-cut letters on positives.—*Die Photographie*.

REDUCTION WITH AMMONIUM PERSULPHATE WITHOUT STAINING

AMMONIUM persulphate as a reducer is particularly advantageous in cases of over-development when the exposures have been correct, for the density of the more opaque portions will be reduced considerably before the lesser deposits in the shadows have undergone any appreciable change. A plain solution of the salt, unfortunately, has certain uncontrollable characteristics, which at times result in irregular action and staining, although frequently perfect

results are had without any difficulty. Mr. H. W. Bennett, writing in the *Journal* of the Royal Photographic Society, gives a formula for a solution which will keep indefinitely and is free from the usual objections to a plain persulphate solution. Mr. Bennett's formula is as follows:

Ammonium persulphate	240 grains
Sodium sulphite	48 "
Sulphuric acid	48 minims
Water to	5 ounces

The solution should be mixed twenty-four hours before it is required for use. Ordinarily it is diluted with nine times its bulk of water, making a one per cent solution of the persulphate, but with some plates it may be desirable to use one part of the stock solution to four parts of water. Usually the weaker bath is preferable. When the plate has been immersed in the solution the dish should be rocked to ensure even action. The white precipitate, seen above the denser portions of the negative and causing turbidity of the solution, is an indication that all is as it should be, and the operation may be prolonged until sufficient reduction has been secured without any danger of staining or loss of quality. The plate should then be washed rapidly in three or four changes of water and placed for ten or fifteen minutes in a solution of hypo — four ounces of hypo to the pint of water — and then washed in the usual manner. The negative changes to a brown color in the reducing-bath and to a black or brownish black in the hypo-solution.

REMOVING AN UNDESIRABLE BACKGROUND

OCCASIONALLY, in making photographs to be used as diagrams and otherwise, it becomes desirable to remove all of the film composing the background, particularly if undesirable, so that clear glass will be left to print black without over-printing the image. This can be done by cutting the film away with a knife if the outlines happen to be straight. Ordinarily, a chemical solution which will dissolve the film is the best means to employ, but it must be applied with great care. Two solutions are required, both of which are very poisonous. The first is a saturated solution of iodine flakes in alcohol. It will require shaking occasionally for a day or so to secure it. The other liquid is a saturated solution of potassium cyanide in distilled water. About fifteen drops of the former added to twenty-five drops of the latter produce a clear solution. With a camel's-hair pencil apply the mixture carefully around the outlines of the image of the dry negative, being very careful not to go beyond the outlines, as the solution is very strong and will remove any part of the image it touches. It is advisable at first to clear a width of perhaps an eighth of an inch around the image, after which the negative should be quickly washed in running water to prevent the solution eating back into the image itself. The remainder of the background can, after ten minutes' washing, be readily removed by applying the solution and then washing and drying the negative.

NOTES AND NEWS

Announcements and Reports of Club and Association Meetings,
Exhibitions and Conventions are solicited for publication



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ANTOINE LUMIÈRE

BOSTON GREET'S LUMIÈRE

WHEN Monsieur Antoine Lumière, the active head of the firm of A. Lumière & Sons, of Lyons, France, first to solve the problem of color-photography, informed us, October 30, that he should make a flying visit to Boston the following Friday, we naturally seized the opportunity to honor him with a reception and dinner, even at so short a notice. This momentous and happy event took place Friday evening, November 1, at the Hotel Brunswick, Boston. After an inspection of finished Autochromes by Lumière experts and Frank M. Steadman and Prof. F. M. Gilley, the company partook of a banquet arranged by Wilfred A. French, of PHOTO-ERA. Among the invited guests were representatives of scientific and educational institutions, investigators, photographers and artists — Antoine Lumière; Prof. Charles R. Cross and Prof. Louis Derr, of the Massachusetts Institute of Technology;

Prof. F. M. Gilley, of the Chelsea High School; Edward Henry Clement, journalist, critic and painter; Prof. John Ritchie, Jr., president of the Boston Scientific Society; Alfred T. Barraud, J. H. Garo and Morris B. Parkinson, professional photographers; Horace B. Pearson, amateur photographer; F. M. Steadman, photographic expert; C. Poulaillon and J. E. Brulatour, of the Lumière North American Company, and, the host, Mr. Wilfred A. French, the editor of PHOTO-ERA. Thus, according to the *Boston Transcript*, every line of relationship of photography to art and science had its worthy representative.

In introducing the distinguished guest Mr. French dwelt with emphasis on the many brilliant achievements in the realm of photographic science by the Lumières, which culminated recently in the invention of the Autochrome process of color-photography — the realization of a long-cherished dream. M. Lumière, deeply moved, responded briefly, limiting his remarks to expressions of gratitude for the cordiality of his reception. Speeches, mainly of a scientific character, were made by Professor Cross, Professor Derr, Professor Gilley, Mr. Clement, Professor Ritchie, Mr. Barraud, Mr. Parkinson, Mr. Poulaillon, Mr. Steadman, Mr. Brulatour and Mr. French.

ERRATUM

QUITE a large number of inquiries have been received at this office regarding the formula which appeared on page 178 of the October issue. This is obviously a typographical error such as will occasionally creep into the pages of any magazine in spite of the greatest effort to avoid them. The quantity of sodium carbonate crystals in the formula mentioned should be four ounces.

COLORING PHOTOGRAPHS

THE article on coloring photographic prints — glossy or matt — by B. I. Barrett, is, without doubt, the most practical demonstration of the subject that has come to our attention. The second portion, which will appear in the January issue, is of even greater interest, as it describes, clearly and in detail, the artist's own method of coloring prints in an eminently satisfactory manner.

A MATTER OF CREDIT

WE find that the interesting reprint, "Daylight Enlarging with a Pocket Camera," by E. R. Plaisted, which was published in our October issue and credited to *Photo-Notes and the Bromide Monthly*, London, appeared originally in the pages of our esteemed cotemporary *The Camera*. We regret that our English friend is so

loath to give proper credit for American reprints, especially as we see printed, as original matter, in the October issue, "Transparent Spots on Negatives and How to Treat Them," by Madison Phillips, which appeared originally in the June issue of PHOTO-ERA.

EXHIBITION OF THE SOCIETY OF COLOR- PHOTOGRAPHERS

THIS organization, the only one of its kind in the world, is to be congratulated upon the decided success of its first annual exhibition, which took place at the offices of the *British Journal of Photography* from September 30 to October 26. When the society was formed, less than a year ago, there seemed little prospect that a sufficient number of persons would join to justify a public exhibition; but decided progress in methods of color-photography, together with the initiative of Mr. Henry J. Comley, honorary secretary, his persistent hard work and untiring devotion, have resulted in greatly increased membership and an exhibition of which all concerned may feel justly proud. It is as complete a presentation of current color-processes as one could wish for, and practically all the leading color-workers of England are represented, as well as others in Germany and America. There are paper prints in three-color carbon, pinatype, collotype and other mediums; but as there has been but little improvement in three-color printing-papers of late, although there is plenty of opportunity for it, the greatest interest of the show was centered in the transparencies by the Lumière and Warner-Powrie processes, both of which were much admired.

WHO HONORED LUMIÈRE IN NEW YORK?

WHEN in New York, recently, to gaze upon the glorious possibilities of the Autochrome plate, as revealed by the leaders of the Photo-Seceession, we caught a faint whisper to the effect that, soon after his arrival in this country, M. Antoine Lumière, the head of the famous establishment in Lyons, France, was the central figure of a function given in his honor. When or by whom; whether by a body or an individual; whether the function or demonstration was civic, fraternal, scientific or photographic in character—public or private—is a mystery. The most exhaustive search failed to reveal even the slightest justification for the rumor. It is safe to conclude that negligence rather than indifference was to blame for a lost opportunity.

FOURTH AMERICAN SALON

THE opening of the Fourth American Photographic Salon occurred on November 1, at Duquesne Garden, Pittsburg, Penn., under the auspices of the Pen, Pencil and Camera Club. As usual, it will be exhibited in several of the large cities of the United States, Toledo, Ohio, being second on the route-list. The pictures will remain with the Toledo Camera Club from December 2 to 21. An examination of the catalog shows that there are thirty-six prints less this year than last, 239 pictures having been accepted

from ninety-four contributors, or an average of about two and one-half to each person. It is also interesting to note that, although seventy workers in the United States contribute about seventy-four per cent of the Salon, two foreign participants have the largest personal collections accepted. Rudolf Dührkoop, of Hamburg, Germany, heads the list with thirteen to his credit, while Giuseppe Castruccio, of Genoa, Italy, is a close second with ten. The largest number of prints accepted from Americans was eight, and this honor went to John Chislett, Wm. H. Phillips and R. L. Sleeth, Jr.

In an early issue of PHOTO-ERA will be reproduced representative specimens from the Fourth Salon, but in the meantime we publish below the full list of contributors and the number of prints accepted from each.

United States

- | | |
|----------------------------|-----------------------------|
| 3 Alexander, Geo. | 1 Jones, J. F. |
| 1 Allen, Louis V. | 1 Kaufmann, R. S. |
| 2 Bailey, C. E. | 1 Keller, Lee Hamilton |
| 3 Berger, Henry, Jr. | 3 Knox, Wm. T. |
| 1 Bingham, Miss Katherine | 1 Langland, B. F. |
| 6 Brookins, D. H. | 2 Magee, Ralph W. |
| 2 Brodhuun, Will S. | 2 Minns, H. W. |
| 3 Brown, Edward | 1 Morris, B. J. |
| 1 Buchanan, R. A. | 2 Park, Irving K. |
| 3 Bull, Dr. C. George | 3 Parrish, Misses W. & G. |
| 1 Buttler, George | 1 Pearce, Mrs. W. W. |
| 1 Chamberlain, Clarence K. | 8 Phillips, Wm. H. |
| 8 Chislett, Jno. | 1 Pickering, C. Ney |
| 3 Christiansen, C. W. | 1 Pitchford, Miss Emily |
| 3 Clarke, C. F. | 2 Reinheimer, Wm. A. |
| 3 Clime, Winfield Scott | 3 Ruggles, J. G. |
| 1 Coit, Richard M. | 7 Ryman, Edward F. |
| 1 Colman, Flora M. | 2 Scheer, Dr. Geo. H. |
| 4 Davis, Dwight A. | 8 Sleeth, R. L., Jr. |
| 1 Daniel, J. R. | 1 Smith, F. A. |
| 1 Dapprich, Fred R. | 1 Spencer, Clinton J. |
| 1 Douglass, Benj. W. | 2 Thurston, C. O. |
| 1 Edling, Sigurd | 3 Townsend, Chas. E. |
| 7 Eisen, Gustav | 1 Tracy, Edith H. |
| 1 Ellis, Wm. Shewell | 1 Tuckernab, F. M. |
| 3 Elmerberger, Geo. C. | 2 Underhill, James E. |
| 1 Field, Avery E. | 4 Weeks, Robt. E. |
| 5 Fleckenstein, Louis | 3 Weymouth, Josephine Dyer |
| 2 Fountain, E. G. | 2 Willard, Mrs. Eleanor W. |
| 1 French, Wilfred A. | 4 Wilde, Arthur W. |
| 3 Gates, S. L. | 1 Williams, Fannie |
| 1 Gotham, T. B. | 5 Winchester, Dr. Walter H. |
| 1 Hendrickson, H. | 1 Wood, Frank G. |
| 1 Hirsch, Alphonse | 2 Zerbe, Wm. H. |
| 4 Holm, Mrs. Sarah | 6 Zierath, Dr. W. F. |
| 2 Hornor, Stockton | |

Canada

- 2 Planché, R. S.

England

- | | |
|----------------------------|-------------------|
| 1 Aitchison, Miss Gertrude | 4 Judge, Fred |
| 1 Barton, Mrs. G. A. | 1 Kimber, S. G. |
| 3 Blake, A. H. | 1 Lloyd, Lewis |
| 3 Hensler, W. A. I. | 1 Nithdale, W. H. |
| 1 Holding, E. T. | 2 Smith, Arthur |
| 2 Huson, Frank E. | 2 Summons, H. Y. |
| | 1 Walburn, A. W. |

Germany

- 13 Dührkoop, Rudolf

India

- 1 Govindasawmynaidw, M. 1 Joshi, P. S.

Italy

- | | |
|---------------------------|-----------------------|
| 1 Benedetelli, Ing. Lucio | 3 Ferrari, Nino |
| 10 Castruccio, Giuseppe | 4 Martini, Dr. Cesare |
| 2 Erizzo, Pierluigi | |

Mexico

- 3 Ravell, Henry

EXHIBITION OF THE ROYAL PHOTOGRAPHIC SOCIETY

THE fifty-second exhibition of this organization was held in London, England, from September 19 to October 26. As a whole, it was much wider in its interest than in years past, the outcome being that it showed admirably the photographic work of the year in all its branches. In fact it is probable that no more thoroughly catholic or representative collection of photographs was ever shown in England. The pictorial section was as ever of most interest, and showed a distinct advance in quality over previous years, due in no little measure to the excellent contributions from Europe and America, indicating the enviable position the society now holds in the minds of foreign workers. The professional show was fair, although probably the weakest section; the exhibition of reproduction methods interesting; while the scientific department gave eloquent proof of the valuable work being done by photography in natural history, medicine, astronomy and many other branches of science. Two medals have been awarded in this department: one to Messrs. Lumière for the Autochrome plate and another to Professors Lowell and Lampland, of the Flagstaff Observatory, for their wonderful photographs of the planet Mars. The section devoted to color-photography naturally came in for a large share of attention, and the transparencies by the Lumière process were decidedly of chief interest.

THE PHOTOGRAPHIC SALON

THE fifteenth exhibition of the Linked Ring, held at London, England, from September 13 to October 26, has not, we fear, proved so noteworthy as the Royal. The consensus of opinion expressed by the English photographic press, with the exception of Mr. Hinton's magazine, seems to be that the Salon, taken as a whole, was a failure, although it contains quite a number of excellent subjects. Of course, Mr. Hinton being a prominent contributor, we can readily understand the enthusiasm of *The Amateur Photographer*. The broader-minded editors, however, and even the British Links themselves, are free to admit that the Salon is seriously crippled by the absence of American workers such as Steichen, Coburn, Stieglitz, Mrs. Kasebier and Clarence White, as well as many of the leading Continental photographers. The pronounced blank thus caused is one which no amount of eccentricity in decoration can conceal. In fact, the exhibition can hardly be considered as more than a collection of prints by a few English workers.

SHERBROOK CAMERA CLUB

At the annual meeting of the Sherbrooke Camera Club the following-named officers were elected for the ensuing year: president, A. S. Hobson; vice-president, R. S. Planché; secretary and treasurer, C. E. Whitcher, and assistant secretary, A. R. Moore. The club is in a very flourishing

condition, and its membership is steadily on the increase.

BOOK REVIEWS

THE GREAT GALLERIES OF EUROPE — The International Gallery, The Tate Gallery, The Louvre and the Luxembourg Gallery. Illustrated, 16mo, thirty-five cents each. H. W. Caldwell Co., 212 Summer St., Boston.

These handy little books are unique in art-literature, their obvious merits assuring them extended and well-deserved popularity. Designed for picture-lovers, especially those unacquainted with the contents of the famous art-galleries of Europe, these illustrated guides convey in a simple, attractive manner, and in the form of object-lessons, the primary knowledge of the world's masterpieces in art.

Each volume of the series contains sixty sepia half-tone illustrations of the chief works contained in the gallery with which it deals, as well as an historical sketch of that particular art collection, while short notes appear under each picture, embodying facts connected with its history or that of the artist who painted it. There is no reason why every person fond of pictures and desiring quick and accurate knowledge about them should not have the entire set; certainly the price is not to be considered.

ART AND THE CAMERA. By Antony Guest. 8vo, profusely illustrated. Price, \$2.00, net. The Macmillan Company, 66 Fifth Ave., New York.

Following closely upon the heels of Mr. Beck's admirable work, to which it forms a fitting companion, comes the achievement by Antony Guest — a book which may justly claim a warm spot in the hearts of photographic readers everywhere, and is destined to occupy a high place in the literature of photography.

Its forty-seven essays are devoted to æsthetic considerations of the art, serving as a source of inspiration to the idealist, while supplementing the technical ability of the professional worker. As critic and guide Mr. Guest presents his views in clear, delightful English, which invests his book with a positive charm. On the important and much-neglected subject of the hands he says: "While on this subject it may be useful to say a word about hands, which inevitably form a valuable addition to a picture, or else a serious detriment. They are most expressive members, but if they are shown in a nerveless, unsuggestive way, they are as likely as not to spoil an otherwise creditable work. Again, if they are forcibly depicted, with all their character displayed, there is always the danger that they will constitute a second point of focus in competition with the head. Truly it is not absolutely necessary that the head should be the most strongly emphasized point, and many good portraits have been made with the face only suggested in a half-light, and the point of focus elsewhere. In such a case the hands, or one of them, might be accentuated very usefully."

WITH THE TRADE

AN IMPORTANT PHOTOGRAPHIC INDUSTRY

IN the May issue of PHOTO-ERA appeared an editorial roundly scoring the numerous concerns, responsible and irresponsible, distributed throughout this country, in large cities and in country towns, who make a regular business of developing and printing for amateurs, and make a mess of it. A cotemporary, wrongly interpreting the meaning of our criticism, undertook to lay the blame for the miserable work put forth, on the amateur for tendering for development spoiled films, from which, naturally, no satisfactory results could be expected. That films are spoiled by careless kodakers, as a result of exposure to heat and dampness, is sometimes the case, as we have frequently pointed out; but it is a positive truth that the cause of so much wretched work being turned out by many establishments, large and small, is due to technical inefficiency and unsuitable and inadequate working-facilities. PHOTO-ERA has not hesitated to point out the lack of scrupulous care exercised even by firms who should know better in handling the large quantity of films entrusted to them for development, and that in many instances the disappointed camerist would be warranted in bringing suit for damages—not against the maker of the film, but against the developing-concern. We know of numerous concerns—firms and individuals—employing ignorant, slovenly workmen, and who are otherwise ill-equipped for the responsible business of developing precious photographic records, yet who have the nerve to solicit such work.

Recognizing the rank injustice that has been, and is being, done to a long-suffering class of enthusiastic camerists, and actuated by a sincere desire to improve the wretched methods and conditions that prevail in the average developing- and printing-establishments throughout the country, the Eastman Kodak Company has issued a clear and comprehensive pamphlet, "Developing and Printing for the Amateur," explaining its own methods, as practised in its factory at Rochester, N. Y., where it handles the enormous number of films sent to it from all parts of the world. It is now up to every one who caters to the business of finishing amateur work to forsake old-fashioned ways, that are clumsy and inadequate, in favor of up-to-date methods, that will greatly facilitate the work and produce superior and uniform results, in the minimum time, and still at a moderate price to the patron. The process of developing and printing for the amateur has been reduced by the Eastman Kodak Company to a series of automatic operations, calling into play the latest

time- and labor-saving devices in the form of developing-machines, drying-ovens and printing-cabinets, all of which can be operated by persons of ordinary intelligence. The sooner a finisher of amateur exposures adopts this new standard method of handling the work, the sooner can he compete with the Eastman Company in quality, celerity and profit, at the same time earning the gratitude and confidence of his patrons.

There is no reason why the camerist should not complete the work begun with the exposure of the plate or film; for only when he is the author of negative and print can he claim to be an amateur photographer in the fullest sense. Indeed, this suggestion has been made by the Eastman Company, as stated in the pamphlet referred to: "Continued simplification and improvement of our products made it a pleasurable possibility for the amateur to 'do the rest' himself, and this we urge upon him, for the better he understands photography, the better purchaser he becomes."

The booklet referred to will be sent by the Eastman Kodak Company, without charge, to any photographer or dealer who is conducting a department for the finishing of amateur work.

THE WYNNE INFALLIBLE EXPOSURE-METER FOR AMERICAN WORKERS

ALL users, in this country, of Wynne's Infallible Exposure-Meter will be interested to know that the January issue, 1908, of PHOTO-ERA, will contain an article by F. H. Jeffree on the application, in the United States, of this meter, using Eastman's Bromide paper. Mr. Jeffree is the author of "Exposure in Enlargement," which appeared in the September PHOTO-ERA, on the use of the Watkins meter and an English bromide paper.

CASH FOR WATERSCAPES

WE have no patience with concerns who offer tempting cash prizes for photographs, putting camerists to a lot of trouble without suitable or any compensation. The publisher of *The Rudder*, however, plainly states what he will do, and may be depended on to carry it out to the letter. His advertisement in this issue tells the whole story.

HOW NOT TO ROLL AN EASTMAN FILM

IN order to enable users of film to avoid pitfalls, the Eastman Company recommends that rolls of films be not rolled too tightly before packing after exposure; otherwise they are liable to produce cinch-marks. It is hoped that all users of roll-films will bear this important hint in mind.

CYKO PAPER FOR THE PROFESSIONAL

THIS paper is being brought more and more to the attention of the professional worker, as it seems to fill a long-felt want, enabling him to use a developing-out paper in all his work. Professional Cyko contains more gelatine and the emulsion is richer in silver than the other brands of Cyko, hence is adapted to negatives made specially to suit platinum prints. The manufacturers, the Ansco Company, of Binghamton, N. Y. (successors to the Anthony & Scovill Co.), make a strong point in favor of this new paper when they say that it is only the photographer who makes his negatives to suit platinum paper and exacts as good or better prints from the said negatives on developing-out paper who is interested in Professional Cyko, as no other grade will accomplish that difficult feat. The Professional Cyko emulsion is compounded so as to produce great softness with contrasty negatives without sacrificing brilliancy. Some papers give the impression of softness, but in reality it is flatness — not softness.

A NEW LOW-PRICED ANASTIGMAT

CHEAP, ill-constructed lenses, under the guise of catchy names, are made by the car-load annually. Though offered to dealers and individual photographers at tempting discounts, 25 to 50 per cent, they do not sell. Several makers of such spurious lenses, unable to dispose of their worthless wares, have gone out of business, and their names are hardly a memory. Those that remain are making a desultory struggle for existence; but they, too, will soon fade away.

Of a far different character is the "Isostigmat" lens, made by the Becks of London, England, where it has made great headway against the ten high-grade anastigmats which control the photographic market there. If you want to get acquainted with a high-grade, low-priced anastigmat of genuine merit, made by a reputable firm and sold by a reliable house, try the "Isostigmat." Williams, Brown & Earle, sole American agents, 918 Chestnut Street, Philadelphia, will gladly furnish you with all the necessary particulars.

A GREAT OPTICAL FIRM

THE Bausch & Lomb Optical Co. is at work making extensive additions to its already enormous plant. Two years ago a three-story building, 40 x 440 feet, was erected for use of the administration. Manufacturing-needs made it necessary to encroach upon this to such an extent, and still the space proved inadequate, that finally the erection of these new buildings had to be undertaken. Two new stories are being added to the administration building, and north of this site the work is being rapidly pushed on a five-story grinding-plant, 110 x 238. These structures, when completed, will almost double the present floor-space, giving the company about ten acres.

FOCAL-PLANE SHUTTER PHOTOGRAPHY

WITH the universal use of Graflex and other cameras equipped with focal-plane shutters, there has come the need of a reliable, comprehensive and easily-understood book on the subject of high-speed photography.

"Focal-Plane Shutter Photography," a very attractive book, issued by the Folmer & Schwing Division of the Eastman Kodak Company, furnishes a fund of information that is not only essential to the user of a focal-plane shutter, but equally valuable to the every-day photographer who may wish to have clear ideas about depth of focus, depth of field, angle of view and many other seemingly abstruse subjects which are clearly and concisely explained.

The illustrations in themselves constitute a comprehensive lesson in photography, as under each picture (and the book contains many) is sufficient information to enable the photographer to proceed with confidence to make negatives of similar subjects. A number of new, and, heretofore, unpublished tables occupy the last five pages of this valuable book, a copy of which, we are informed, will be mailed to those interested in Focal-Plane Shutter Photography, free upon request, by the Folmer & Schwing Division, Eastman Kodak Co., Rochester, N. Y.

A REAL PORTRAIT-LENS

As photographic authorities—including such experts as C. H. Claudy, Dr. George H. Scheer, Felix Raymer and David J. Cook—are urging the employment of regular portrait-lenses for the highest artistic results in portraiture, for either studio or home use, it is a genuine pleasure to invite the attention of workers generally to the Darlot Portrait-Objective. This standard lens, working at F. 4.5, is a corrected and modified Petzval system. The only inconsistency about this admirable lens is its low price. The American agents are the Robey-French Co., Boston, Mass.

AN ENGLISH FILM

G. GENNET, of New York, announces that he is the American agent of the Austin Edwards Rollable Film for hand-cameras, and will furnish information regarding its qualities to all who are interested.

PHOTOGRAPHY AND CRIME

It has long been a well-known fact that photography is of great assistance in the detection of crime, and particularly of forgery. In a recent issue of *Truth* there are some interesting items regarding the celebrated Pigott forgeries. These forgeries were photographed and projected on a screen with a stereopticon, when it became apparent that the words were first traced in pencil and then inked over the pencil-marks. On the screen, blank spaces showed the center of each ink-stroke, caused, no doubt, by the ink running off the greasy pencil-marks.

A Plea for Cyko Prints



Platinums
Carbons.

J. Moody Dawson
Elegance in Photographic Art,
Houston, Texas

Dear Mr. Stanbury:-

I just thought I would write you to thank you for that beautiful Professional Cyko Paper you just sent Mr. Schaeffer. He gave me a sample. I made two prints and left my dark room and went to the phone and ordered two gross of cab. I finished up some orders for Platino on this paper and my customers were highly pleased with it. I think you have ----- skinned a city block and that means you have the finest developing Paper on earth. I am tickled to death with it and will use it without fail as long as I am in the profession and you make the paper. With best wishes, I am,
Fraternally yours,

Will send you some prints in a day or so.

Greatest Magazine

Regular Price 1 Year	CLASS A.	Our Price 1 Year
\$1.00	American Boy	\$1.00
1.00	American Magazine	1.00
1.00	Children's Magazine	.75
1.00	Cosmopolitan Magazine	1.00
1.00	Good Housekeeping	1.00
1.00	Harper's Bazar	1.00
1.00	Health	.75
1.00	Health Culture	.75
1.00	Home Magazine	.80
1.00	Kindergarten Review	1.00
1.00	Little Folks (New sub. only)	1.00
1.50	Metropolitan Magazine	1.50
1.00	Pacific Monthly	.75
1.00	Philistine	.85
1.00	Pictorial Review	1.00
1.00	Success Magazine	1.00
1.50	Sunset Magazine	1.50
1.00	Ten Story Book	.85
1.00	Travel Magazine	1.00
1.00	Woman's Home Companion	1.00
1.50	World Today	1.50

Regular Price 1 Year	CLASS B.	Our Price 1 Year
\$1.80	Ainslee's Magazine	\$1.50
2.50	The Bookman	2.50
2.00	The Independent	2.00
3.00	Outing Magazine	3.00
3.00	Reader Magazine	2.25
3.00	Review of Reviews	3.00
2.50	The Smart Set	2.50
3.00	Suburban Life	2.50
3.00	Yachting	3.00

Regular Price 1 Year	CLASS III.	Our Price 1 Year
\$1.00	Garden Magazine	\$1.00
1.00	Red Book Magazine	1.00

Regular Price 1 Year	CLASS IV.	Our Price 1 Year
\$1.50	Appleton's Magazine	\$1.50
1.50	The Etude (for music lovers)	1.50
2.00	The Industrial Magazine	2.00
2.00	Motor Age	1.50
1.50	The Musician	1.50
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1 of 3	With	1 of 3	1.75	2.40	1.85	2.10	3.10	2.35	...	3.80	2.60	4.10	...	3.10	3.35	4.10
1 of 4	With	1 of 4	2.00	2.65	2.10	2.35	3.35	2.60	...	4.05	2.85	4.35	3.10	3.35	3.60	4.35
2 of 4	With	1 of 4	3.00	3.65	3.10	3.35	4.35	3.60	3.70	5.05	3.85	5.35	4.10	4.35	4.60	5.35
1 of 5	With	1 of 5	2.25	2.90	2.35	2.60	3.60	2.85	3.00	4.30	3.10	4.60	3.35	3.60	3.85	4.60
1 of 6	With	1 of 6	...	3.00	3.70	3.00	3.05	4.40	3.20	4.70	3.45	3.70	3.95	4.70
2 of 6	With	1 of 6	3.70	4.35	3.80	4.05	5.05	4.30	4.40	5.75	4.55	6.05	4.80	5.05	5.30	6.05
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1 of 8	With	1 of 8	3.00	3.65	3.10	3.35	4.35	3.60	3.70	5.05	3.85	5.35	4.10	4.35	4.60	5.35
1 of 9	With	1 of 9	3.25	3.90	3.35	3.60	4.60	3.85	3.95	5.30	4.10	5.60	4.35	4.60	4.85	5.60
1 of 12	With	1 of 12	4.00	4.65	4.10	4.35	5.35	4.60	4.70	6.05	4.85	6.35	5.10	5.35	5.60	6.35
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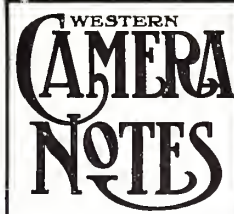
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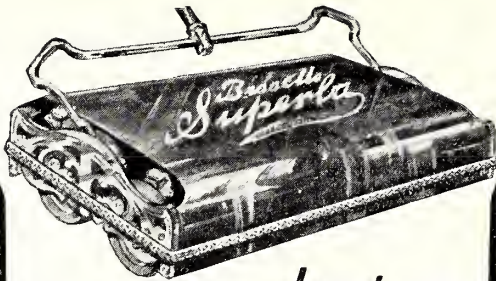
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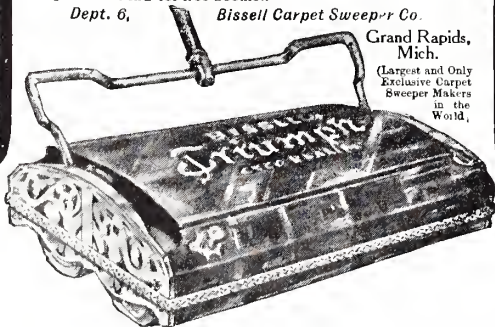
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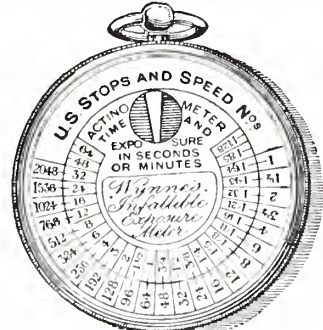
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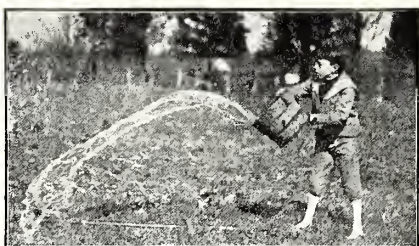


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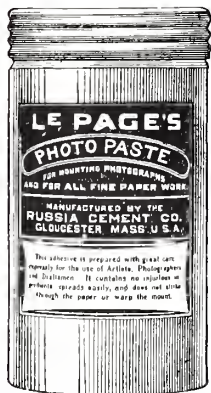
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Number eighty-two of the *Photo Miniature* contains an article on Modern Dark Rooms, from which we excerpt the following:

"It may seem paradoxical to begin a book avowedly devoted to the dark room with a dissertation on the possibility of dispensing altogether with this one time necessity in photography.

"Both films and plates may be changed, developed and fixed in daylight by the use of cleverly devised tanks, so compact and dainty in their construction, that my lady can carry one in her hand bag without perceptibly adding to its weight, or fear of soiling the most delicate lingerie; or the military photographer on the fighting line can sling the tank on his belt with his water bottle and develop his day's exposures at the most convenient mud puddle enroute.

"And, be it noted, these concessions to the great god Convenience have been granted, not at the expense of, but with added efficiency, for they are based on careful research and the elimination of uncertain and haphazard methods.

"Tank Development is not new. The early apparatus, however, was somewhat crude and a dark room of some kind was essential at the beginning and end of development, so that one may fairly say that the advantages of the method were not generally appreciated until the Kodak Company introduced its now well-known tank method for the development of roll films; cleverly linking the advantages of the 'time and temperature' method with the practical convenience of the light-proof tank."

ONLY ONE.

In winter the photographer has more to contend with than during the

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(1)

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pictorial quality and interest. Whatever the environment, the human interest in the home is always the greatest and however much we enjoy making pictures of the home, making pictures of those who make the home always furnishes the greatest pleasure.

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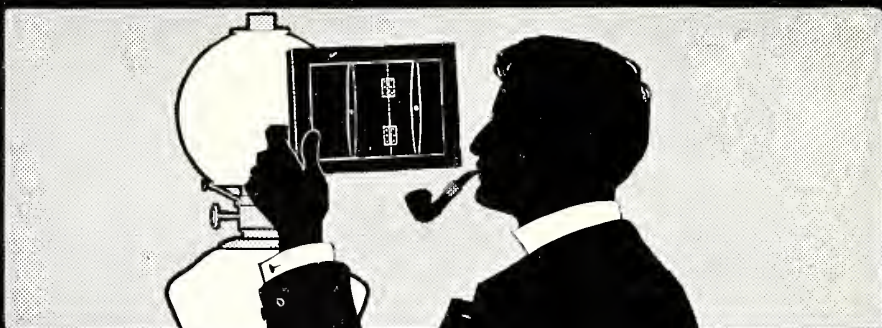
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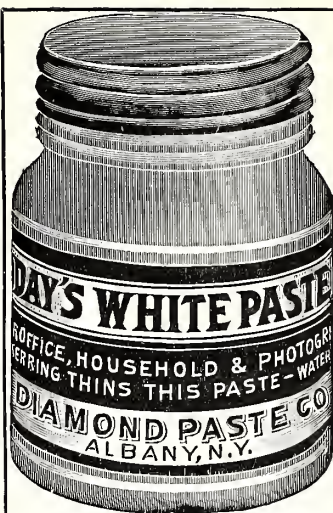
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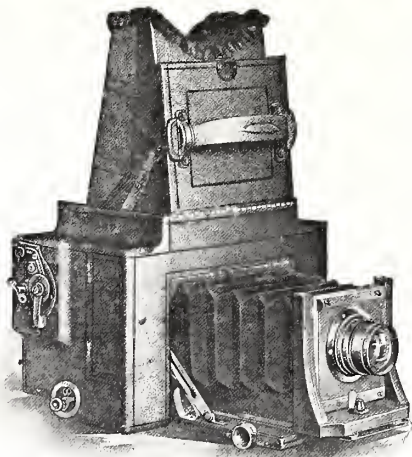
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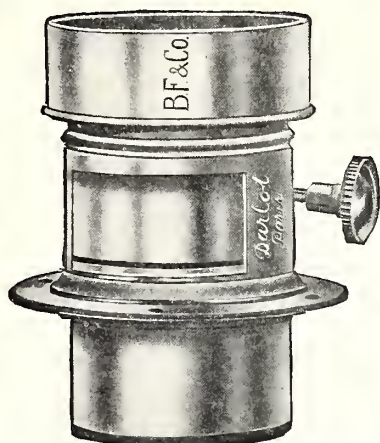
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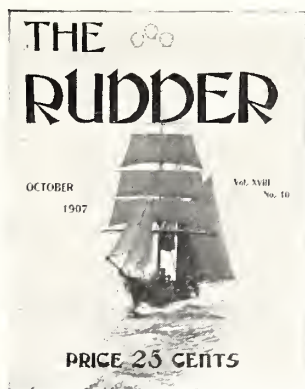
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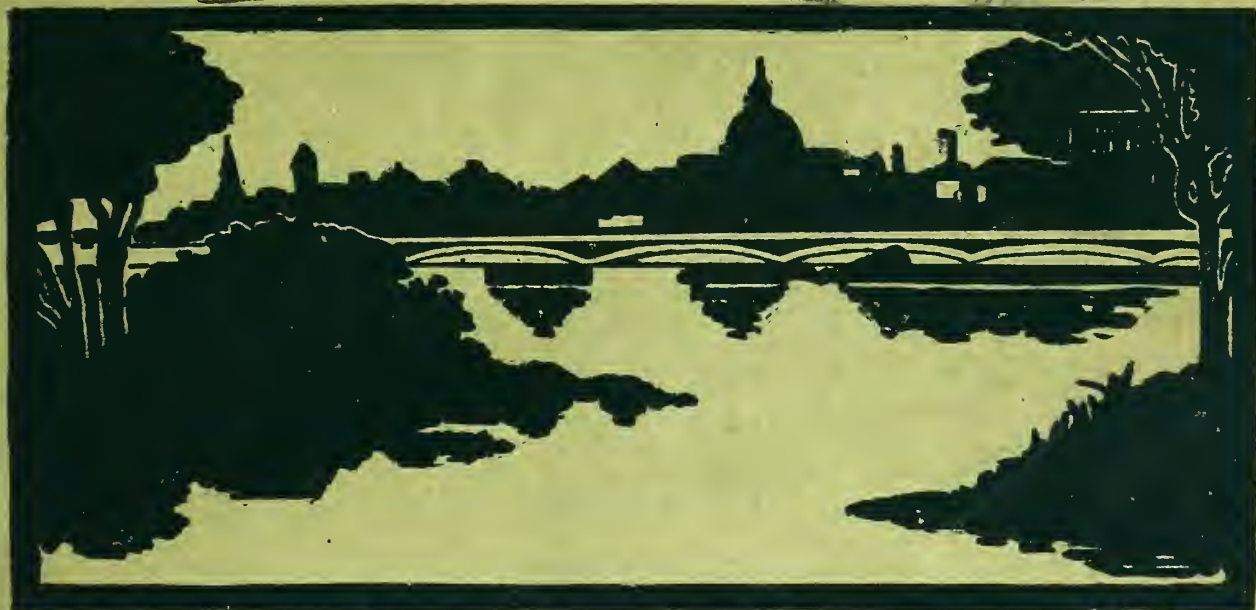
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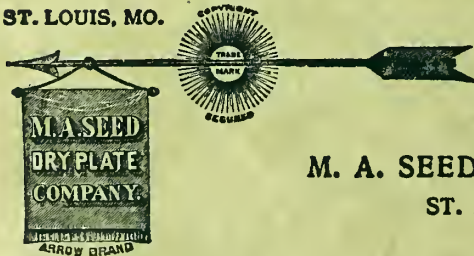
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